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U.S. Department of the Interior
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Milwaukee Field Office

October 1998

Mosquito Creek Lake

Proposed Planning Analysis/ Environmental Assessment

99-017192

**In cooperation and coordination with
U.S. Army Corps of Engineers, Pittsburgh District,
and Ohio Department of Natural Resources**

C

United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Milwaukee Field Office
PO Box 631
Milwaukee, Wisconsin 53201

In Reply Refer To:
1610MCL (030)

September 28, 1998

Dear Reader:

I am pleased to present the Proposed Planning Analysis and Environmental Assessment (PA/EA) for oil and gas leasing at the U.S. Army Corps of Engineers' Mosquito Creek Lake project in Trumbull County, Ohio. The Proposed PA/EA serves as a companion document to the Draft PA/EA released in April 1998. Appropriate references to the Draft PA/EA are made throughout this document.

The Draft PA/EA detailed the potential impacts associated with the leasing and subsequent development of Federal oil and gas resources at Mosquito Creek Lake. The Draft PA/EA analyzed two alternatives: Alternative A, No Action/No Lease, and Alternative B, Lease with a "no surface occupancy" restriction. Based on public comments received during the 60-day review period, the Proposed PA/EA provides more detail regarding certain processes and includes several new pieces of information. This new information was considered and incorporated into the analysis process. The Proposed PA/EA also includes responses to public comments made during the comment period, including both written and oral statements.

Based on the findings of the Draft PA/EA and the supplemental information/analyses, the Bureau of Land Management (BLM) proposes to lease the Federal oil and gas resources located at Mosquito Creek Lake subject to the surface and subsurface use restrictions identified on pages 1-11 and 1-12 of the Draft PA/EA. Mitigation measures listed in Appendix A, herein, would apply to all approved drilling permits or Federal agreements.

The Proposed PA/EA has been prepared in accordance with the Federal Land Policy and Management Act 1976 and the National Environmental Policy Act of 1969. The Proposed PA/EA may be protested by any person who participated in the planning process and who has an interest which is or may be adversely affected by the approval of the plan. A protest may raise only those issues which were submitted for the record during the planning process (see 43 CFR 1610-5-2). Protests must be filed in writing with the Director of BLM at the following address:

Director, Bureau of Land Management
Attn: Ms. Brenda Williams, Protests Coordinator
WO-210/LS-1075
Department of the Interior
Washington, D.C. 20240

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Overnight mail address for protests is:

Director, Bureau of Land Management
Attn: Ms. Brenda Williams, Protests Coordinator (WO-210)
1620 L Street, N.W., Rm. 1075
Washington, D.C. 20036
Phone: (202) 452-5110

To expedite consideration, in addition to the original sent by mail or overnight mail, a copy of the protest may be sent by:

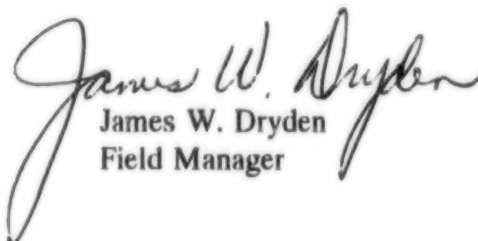
FAX to (202) 452-5112; or
E-mail to bhudgens@wo.blm.gov

Protests filed late, or filed with the State Director or Field Manager, shall be rejected by BLM. All protests must be written and must be postmarked on or before November 18, 1998, and shall contain the following information:

- The name, mailing address, telephone and interest of the person filing the protest.
- A statement of the issue or issues being protested.
- A statement of the part or parts of the document being protested.
- A copy of all documents addressing the issue or issues previously submitted during the planning process by the protesting party, or an indication of the date the issue or issues were discussed for the record.
- A concise statement explaining precisely why the BLM's decision is wrong.

Upon resolution of any protests, an Approved Planning Analysis and Decision Record (DR) will be issued. The Approved Planning Analysis/DR will be mailed to all individuals who are currently on the plan's mailing list and other interested parties as requested. Thank you for your continued interest in this project.

Sincerely,


James W. Dryden
Field Manager

JD

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INTRODUCTION

The Bureau of Land Management (BLM) proposes to lease federally owned oil and gas resources underlying the Mosquito Creek Lake project area in Trumbull County, Ohio. The project is managed by the U.S. Army Corps of Engineers (COE). The Draft Planning Analysis/Environmental Assessment (PA/EA) was released to the public on April 10, 1998 for a 60-day comment period and governor's consistency review. This Proposed PA/EA identifies the agency's proposed plan, provides supplemental information, and clarifies certain processes and concerns raised during the public comment period. It includes copies of the letters received during the comment period and BLM's responses to the substantive comments made in those letters. In addition, the Proposed PA/EA includes BLM's responses to comments made at two public meetings held in Trumbull County in May, 1998. BLM's contract with the court reporting service prevents us from publishing the transcripts verbatim. Copies of the transcripts can be found at the following libraries in Trumbull County: Viets Memorial Library, Cortland; Warren Public Library, Warren; and the Bristol Public Library, Bristolville, Ohio.

In order to minimize printing costs associated with this document, the Draft PA/EA was not reprinted in its entirety. This Proposed PA/EA serves as a companion document to the Mosquito Creek Lake Draft PA/EA. Reviewers should consult the Draft PA/EA for full explanation of the alternatives, affected environment, environmental impacts and other relevant material. References to page numbers or sections of the Draft PA/EA are clearly noted in this document.

This document also contains BLM's Finding of No Significant Impact (FONSI) developed in accordance with the National Environmental Policy Act of 1969 (NEPA) and Title 40 Code of Federal Regulations (CFR) 1500, et seq. (page 55). The COE Pittsburgh District has given preliminary indications that they are prepared to sign a FONSI for the Proposed PA/EA. Execution of the FONSI will, however, be deferred until after the 30-day protest period has expired and all protests to the proposed plan have been appropriately resolved.

THE PROPOSED PLAN

The BLM proposes to offer for lease the Federal oil and gas resources underlying the Mosquito Creek Lake project area subject to the surface and subsurface use restrictions identified on pages 1-11 and 1-12 of the Draft PA/EA. BLM will apply mitigation measures listed in Appendix A, page 58, herein, as conditions of approval attached to drilling permits or as terms of approval for Federal agreements. It is assumed that other entities' administrative responsibilities will be conducted in accordance with their respective mandates unless otherwise noted in this document.

SUPPLEMENTAL INFORMATION

New information received during the comment period has been reviewed, incorporated into the analysis of potential impacts, and is presented below.

WATER RESOURCES

Updated information relating to water quality standards was provided by Mr. Thomas Holloway, Sanitary Engineer, Trumbull County (see Appendix B, page 71). Table 3-3 (revised) lists trace metals and volatile organic compounds (VOCs) with measured concentrations from samples taken at the Warren water plant intake, Ohio Environmental Protection Agency (OEPA) aquatic life standards (ALS), and the OEPA public water supply standards (PWSS). The most recent data are from 1995 (Peterson, et al., 1997). The existing level of manganese (90 µg/l) currently exceeds the OEPA PWSS (50 µg/l).

Table 3-3 (revised). Water Quality Observations and Standards for Certain Trace Metals and Volatile Organic Compounds

PARAMETER	CONCENTRATION (observed at Mosquito Creek Lake)	OEPA - ALS	OEPA-PWSS
<i>Trace Metals</i>			
Arsenic (As)	<3 µg/l*	190 µg/l	50 µg/l
Barium (Ba)	12 µg/l	No standard	1000 µg/l
Cadmium (Cd)	<0.5 µg/l*	1.4 µg/l	10 µg/l
Chromium (Cr)	<5 µg/l*	3,433,000 µg/l	50 µg/l
Lead (Pb)	< 2 µg/l*	6.9 µg/l	50 µg/l
Nickel (Ni)	<20 µg/l	4,600 µg/l	610 µg/l
Manganese (Mn)	90 µg/l	No standard	50 µg/l
<i>Volatile Organic Compounds</i>			
Benzene	<0.5 µg/l	710 µg/l	5 µg/l
Xylene	No Data	No standard	No standard
Toluene	No Data	300,000 µg/l	10,000 µg/l

* Values represent concentrations below detectable levels.

Source: Ohio Administrative Statutes Rule 3745-1-07 (OEPA) and Peterson, et al. 1997.

The analyses in Sections 4.2.3 and 4.2.4 of the Draft PA/EA address the potential impacts against these standards, where applicable. The discussion concerning the

example of a catastrophic loss of a brine truck directly into Walnut Creek demonstrates that the quality of the surface water of Mosquito Creek Lake would not approach the upper limits of the PWSS or ALS standards. The Draft PA/EA concludes that with the application of proper mitigation measures, minimal sediments or other materials from drilling and producing wells would reach the surface waters and hence only negligible impacts to surface water quality would be anticipated. Therefore, no further analysis against these standards would be warranted. With respect to groundwater, the only anticipated impact would be a localized, short-term increase in turbidity to water wells during the drilling phase (Section 4.2.4, page 4-38 of the Draft PA/EA). No PWSS standard for turbidity exists and if turbidity were to occur, standard public water supply treatment/filtration would mitigate the problem. As for private water wells, they would incur the short-term impact of an increase in turbidity.

U.S. GEOLOGICAL SURVEY REPORTS:

GROUND-WATER RESOURCES IN THE VICINITY OF CORTLAND, 1997

WATER QUALITY IN THE VICINITY OF MOSQUITO CREEK LAKE, 1998

Two studies have been completed recently by the U. S. Geological Survey (USGS) which characterize water resources in the vicinity of Mosquito Creek Lake. The initial study involved an investigation of the groundwater resources that supply potable water to the city of Cortland (USGS, 1997). This study described the hydrogeologic framework and defined the area contributing recharge to the Cussewago sandstone which is the primary aquifer in the region and the sole source of drinking water supplied to the city of Cortland. The Cussewago is overlain by the Bedford shale which confines the aquifer and separates it from the Berea sandstone in the majority of the study area. The Berea is a secondary source of groundwater in the Mosquito Creek Lake area, and the Berea and Cussewago are probably in hydraulic connection where the Bedford shale has been eroded.

The Cussewago is recharged in part by water from Mosquito Creek Lake that eventually reaches the aquifer through recharge from glaciofluvial sediments underlying the lake bottom. Both the Berea and the Bedford shale are missing underneath the lake. Other sources of recharge are by infiltration from precipitation where the Cussewago appears at the earth's surface west of the lake in Mecca Township, and by connectivity with the Berea where the Bedford shale is absent (USGS, 1997). Recharge rates were not determined by the USGS but aquifer recharge appears to be sufficient to replenish the Cussewago as water is withdrawn at the present rate by Cortland's public supply wells. Travel time from the recharge area beneath the lake to Cortland's wells is estimated to range from 60 to 110 years.

A second USGS study provided a baseline of water quality information and "fingerprinted" the chemical nature of oil, gas and brine from the Berea, Cussewago and Clinton sandstones in the surface and groundwater sources in the Mosquito Creek

Lake area (USGS, 1998). The lake provides the only source of drinking water for residents of the city of Warren and surrounding communities. Oil was first produced commercially in 1860 from the Mecca oil pool in the shallow Berea "grit"¹, less than 100 feet below the earth's surface. Fresh water underlies the Mecca oil in the Berea, but the Berea is not an abundant water source and fewer private water wells are drilled into it than into the Cussewago sandstone aquifer. One result of the field work conducted during this study was a determination that Mecca oil is found in both the Berea and Cussewago sandstones. The Berea does not exist beneath Mosquito Creek Lake, and therefore, it was also documented that Mecca oil was never produced in the area now occupied by the lake. Since the late 1970s, the major zones of hydrocarbon production have been the deeper Clinton sandstones at more than 4,000 feet.

Surface and groundwater samples were collected in the Mosquito Creek Lake area to characterize current water quality in relation to the presence of oil, natural gas, and brine. The description of water quality allowed for distinction to be made between hydrocarbons formed in place and hydrocarbons that may have migrated between the Berea, Cussewago, and Clinton formations. Brine samples were taken only from the Clinton sandstones because brine is not associated with the shallow Berea and Cussewago hydrocarbons (USGS, 1998).

Methane gas accumulations occur naturally along with fresh water in both the Berea and Cussewago aquifers. The gas is of biogenic origin, i.e. produced by the action of microorganisms (USGS, 1998). Methane concentrations were considered hazardous in some water samples from wells drilled into the Cussewago. The chemical composition of Mecca oil is characteristic of shallow oil deposits which have been extensively altered by biodegradation. Oil was not detected in water and sediments sampled from Mosquito Creek Lake.

Oil, gas, and brine associated with the Clinton sandstones have not undergone extensive biodegradation because they occur at depths where the presence of microorganisms is limited (USGS, 1998). Thus, they are chemically distinguishable from the hydrocarbons that exist in the shallow Berea and Cussewago sandstones. Clinton oil and gas were not detected in surface or groundwater samples during this study. A mixing diagram constructed for the water samples collected showed no demonstrable mixing of these water resources with brine from the Clinton sandstone. Although most water samples plotted in the zone of local fresh water, other surface and groundwater samples indicated presence of saline water. The USGS suggested that the sources of salinity may have been road salt solution or septic effluent (USGS, 1998). Septic effluent was observed near some sampling sites in the field.

The 1998 USGS study satisfied the need for baseline water quality data for the

¹An antiquated term which includes the Berea, Bedford, and Cussewago.

Mosquito Creek Lake area. Many impacts to water resources, including those that may result from oil and gas drilling and production activities, can now be more readily assessed. One result of the study is that no evidence was provided that there has been a "measurable release of oil, gas or brine from the deeper Clinton sandstones to the shallow aquifers, Mosquito Creek Lake, or the lake's tributaries" from current oil and gas activities in the area (USGS, 1998). Migration of Clinton hydrocarbons and brine from existing oil and gas wells has not occurred. Given that the Clinton reservoirs are under pressured, it was calculated that oil and brine from Clinton wells could not reach the Berea and Cussewago aquifers. However, gas could rise within the wellbores far enough to mix with fresh water in the shallow aquifer system provided that the well casings had been improperly installed.

Both of the USGS studies document the lack of hydrocarbon contaminants in the lake, but notable levels of methane gas were recorded in drinking water from Cortland's wells. Methane gas occurs naturally in the Cussewago sandstone. The most significant finding from these studies appears to be that water resources in the Mosquito Creek Lake area are most vulnerable to surface spills and contaminants from reserve pit leachate associated with oil and gas activities rather than to mixing of hydrocarbons and brine among the shallow aquifers, Clinton sandstones, and the lake. A discussion of potential impacts to water resources from oil and gas operations can be found in Section 4.2.4, pages 4-33 and 4-34 of the Draft PA/EA.

The lake and surface waters could be impacted directly by oil or brine spills or by overflow from drilling pits. The potential for groundwater contamination exists if contaminants enter the aquifer system by infiltration from the surface or if drilling fluids are leached from reserve pits. An increase in groundwater salinity is the primary concern associated with leaking drilling pits. The confined status of the Cussewago sandstone, however, "helps protect the water in [this] aquifer from contamination" (USGS, 1997).

Protection of the water resources in the Mosquito Creek Lake area is discussed in the Draft PA/EA, Section 4.1, pages 4-2 and 4-3. Constraints have been identified which will function to maintain existing surface and groundwater quality (pages 4-9 and 4-10 of the Draft PA/EA). Contamination from oil and gas wellbores is not considered a major problem (USGS, 1998). Proper installation and cementing of casing during drilling operations will isolate the shallow aquifers and prevent the mixing of deeper reservoir gas with fresh water (Section 2.6, page 2-7 of the Draft PA/EA).

The 1998 USGS study identified two areas where the aquifers are particularly susceptible to contamination from oil and gas drilling and production activities. The first is at the confluence of Walnut Run and Mosquito Creek Lake where soil and sediments that overlie the Berea and Cussewago sandstones are thin and in some places the sandstones are exposed at the surface. Also, west of the lake near the boundary of Bazetta and Mecca Townships, the Cussewago is near the surface. At

these locations, the aquifers are most susceptible to contamination from surface spills. The need for specific mitigation measures to protect these areas from impacts associated with oil and gas development would be determined on a case-by-case basis as proposed well sites are evaluated.

BIOLOGICAL RESOURCES, SPECIAL STATUS SPECIES

The Ohio Department of Natural Resources (ODNR), Division of Natural Areas and Preserves identified several State listed species/concentrations of breeding animals to be added to Table 3-4 of the Draft PA/EA (see Appendix B, page 80). A revised table is presented below:

Table 3-4 (revised). Special Status Species Which May Be Present Within or Near the Mosquito Creek Lake Project Area

COMMON NAME (<i>Scientific name</i>)	STATUS	PRESENCE (Source)
Indiana bat (<i>Myotis sodalis</i>)	F-E; S-E	Possible (1)
River Otter (<i>Lutra canadensis</i>)	S-E	Verified (2)
Bald eagle (<i>Haliaeetus leucocephalus</i>)	F-T; S-E	Verified (1,2,3)
Osprey (<i>Pandion haliaetus</i>)	S-E	Verified (2)
Northern harrier (<i>Circus cyaneus</i>)	S-E	Verified (2,3)
Great blue heron colony (<i>Ardea herodias</i>)	bac	Verified (3)
King rail (<i>Rallus elegans</i>)	S-E	Possible (2)
Virginia rail (<i>Rallus limicola</i>)	spt	Verified (3)
Cliff Swallow (<i>Hirundo pyrrhonota</i>)	bac	Verified (3)
Eastern massasauga (<i>Sistrurus catenatus catenatus</i>)	fsc; S-E	Verified (1,2,3)
Eastern sand darter (<i>Etheostoma pellucidum</i>)	fsc	Possible (1)
Clubshell mussel (<i>Pleurobema clava</i>)	F-E; S-E	Possible (1)
False hop sedge (<i>Carex lupuliformis</i>)	S-T	Possible (3)
Hobblebush (<i>Viburnum alnifolium</i>)	sc	Possible (3)
Gray birch (<i>Betula populifolia</i>)	sc	Verified (3)
Oak-maple swamp	snf	Possible (3)

F: Federal species listed by the U.S. Fish and Wildlife Service (USFWS) under Endangered Species Act (ESA)

E/T Endangered/Threatened species

fsc Species identified as a Federal species of concern

S: State species listed by the ODNR

E/T Endangered/Threatened species

spt species could become State listed

sc State species of concern

snf significant natural feature

bac breeding animal concentration

Presence Definitions: Possible - Suitable habitat is present, but the species has not been documented within the Mosquito Creek Lake planning area. Verified - Species has been verified within the Mosquito Creek Lake Wildlife Area.

Sources: (1) USFWS, (2) ODNR, Mosquito Creek wildlife area records, (3) ODNR, Division of Natural Areas and Preserves, Natural Heritage Program

Based on this new information, the following two mitigation measures have been identified and have been incorporated into Appendix A, pages 62-63 as special mitigation measures:

- Removal of hobblebush will be avoided.
- Disturbances in massasauga habitat will be avoided or seasonal restrictions will be applied. Site inspections will be made to determine the potential for the presence of the massasauga or its habitat. If indicated, a survey would be required to document that the massasauga does not inhabit the area. If it is determined that the massasauga is present or potential habitat exists, surface disturbance will not be permitted from mid April through the end of October. Surface disturbance would also not be permitted if a site is identified as massasauga winter habitat.

NOISE

COE comment #4 (see Appendix B, page 84) to the Draft PA/EA requested that information regarding existing noise levels in the Mosquito Creek Lake project area be provided. The following table provides this information.

Noise Levels Measured at Various Sites Around the Mosquito Creek Lake project area

SITE NAME	MEASUREMENT* (dBA)	SITE NAME	MEASUREMENT* (dBA)
Dam Site Picnic Area	49 to 56.2 (traffic)	Main Street Boat Launch	44.6
Mosquito Creek State Park Entrance	40.6	Bazetta Township Park	43.5
Mosquito Creek State Park Campground	37.4	Lakeview Picnic Area	47.8 to 64.2 (traffic)
Housel-Craft Road Boat Access	38.4	Corps Office and Visitor's Center	48.2 to 56.6 (traffic)
Route 88 Causeway - West Side	37.4	Route 305 Boat Launch	43
Mahan-Denman Road Boat Access	36.2	Tailwater Picnic Area	58.5
Causeway Sport Shop/Boat Launch	49.5	Mosquito Creek Picnic Area	49
Middle of Route 88 Causeway	49.2	Lakeview School District Property	53

*Sound levels were measured in A-weighted decibels (dBA) with a hand-held CEL 231 Digital Sound Survey Meter by BLM staff in 1996.

LOCATION OF DELPHI-PACKARD PLANT

During the public comment period, it was noted that the location of the Delphi-

Delphi-Packard Plant Cortland Ohio

**Delphi-Packard
Plant**



**Army Corps of Eng.
Project Boundary**



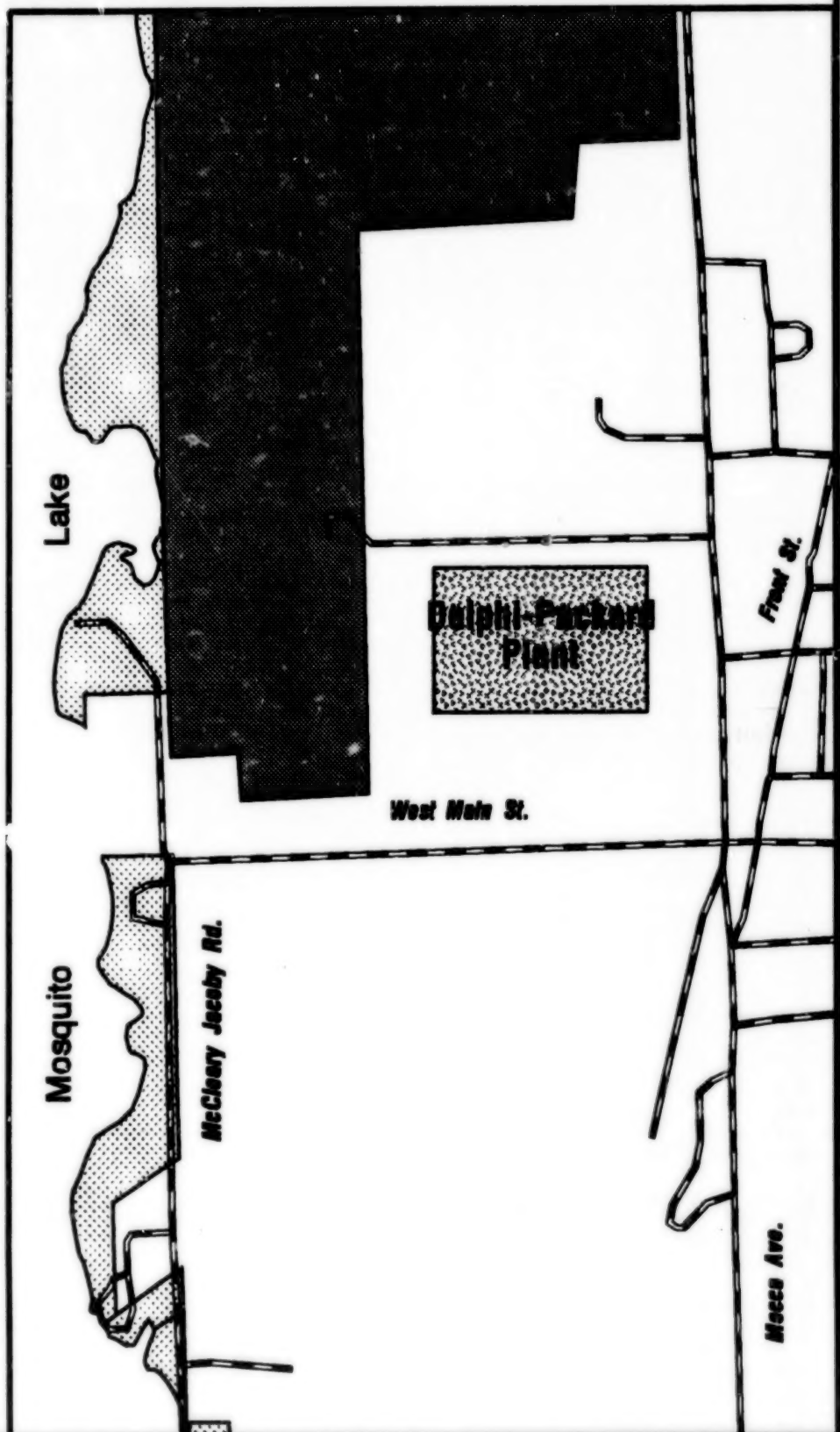
State Park



Streets



270 0 270 540 Feet



Packard industrial site was omitted from Map 5 of the Draft PA/EA. The location of this site is provided on the map entitled Delphi-Packard Plant found on the previous page.

POINTS OF CLARIFICATION

Several comments requested clarification or additional detail about certain processes or plans referenced in the Draft PA/EA. In addition, one comment resulted in a change to how the groundwater investigation process would be implemented. These concerns are addressed below.

APPROVAL OF FEDERAL AGREEMENTS/DRILLING PERMITS

COE comment #1 (see Appendix B, page 84) requested that the processes for approving Federal agreements and Federal drilling permits be outlined. The general steps for processing both Federal agreements (which may include either private or Federal wells) and Federal drilling permits (which apply specifically to Federal wells) can be found in the table below. Section 2.4 of the Draft PA/EA addresses compliance with the National Environmental Policy Act (NEPA) and outlines the environmental analysis process for approval of Federal agreements involving private oil and gas wells. Private wells drilled under an approved Federal agreement would be permitted through the O^r NR Division of Oil and Gas.

General Steps in Processing Federal Agreements and Drilling Permits

Authorizing Document→ BLM Process	Federal Agreement	Federal Drilling Permit
Identify Proposed Well Location	Operator would be required to provide proposed well location to BLM for analysis.	Operator would provide proposed well location in Federal Application for Permit to Drill (APD).
On-site Inspection with operator, surface owner, adjacent surface mgmt. entities, others as appropriate	BLM would schedule inspection of proposed well site and utilize information provided in State permit application, if available.	Inspection required under Federal regulations - operator's surface use plan as outlined in APD would be analyzed.
Environmental Analysis	See Section 2.4 of Draft PA/EA - if exception criteria are met, environmental assessment would be prepared.	Site specific environmental assessment would be prepared to identify issues and develop appropriate mitigation measures.
Mitigation Measures	If applicable, mitigation measures would be identified during on-site inspection and through environmental assessment, if appropriate.	Mitigation measures would be identified through on-site inspection and through environmental assessment.

Authorizing Document→ BLM Process	Federal Agreement	Federal Drilling Permit
Decisions/appropriate conditions or terms	BLM would decide on whether to approve Federal agreement - if approved, mitigation measures would be attached as terms of agreement - ODNR Division of Oil and Gas would issue drilling permit.	BLM would decide on whether or not to approve APD - if approved, mitigation measures would be attached as conditions to the approved APD.

For Federal wells (wells where the bottomhole location is in federally owned minerals) operators are required to comply with Federal regulations and Orders relating to the permitting and operation of Federal wells. These regulations and Orders are outlined in Appendix A, Table A-1 under "Federal Controls, BLM Oil and Gas Operating Requirements for Federal Wells" of the Draft PA/EA. Operators of Federal wells must obtain both State and Federal drilling permits. To obtain a Federal permit, a lessee or operator would submit an Application for Permit to Drill (APD) to the BLM Milwaukee Field Office. The APD consists of a proposed drilling program and plans for surface use and reclamation, all of which must be approved before operations can begin. The APD may also contain plans for proposed production facilities should the well prove to be capable of production.

Upon receipt of the APD, BLM staff will arrange an on-site meeting with the operator, landowner, adjacent surface management entities, and other appropriate Federal, State and local agencies. All environmental and technical concerns, including potential conflicts with the surface uses or facilities, are resolved to the greatest extent possible during the on-site meeting. Mitigation measures found in Appendix A of this document would be attached as conditions of approval to an APD. In addition, a site specific environmental document, in compliance with NEPA, would be prepared at the time a well site is proposed. Mitigation measures developed through this site specific environmental analysis would also be attached as conditions of approval to an approved APD.

GROUNDWATER INVESTIGATIONS

Comments submitted by the ODNR (see Appendix B, page 81-82) detailed the uncertainty of the Division of Oil and Gas' budget for future years. Given budgetary constraints, it is not certain as to whether the Division will have hydrogeologists available to conduct groundwater investigations in relation to proposed leasing at Mosquito Creek Lake. It was necessary therefore to develop an alternative means of implementing the investigation process for resolution of public complaints. Under this alternative, an assumption is made that not all staff capability within the Division of Oil and Gas would be lost as a result of budgetary constraints. It is assumed that Division of Oil and Gas field inspectors/investigators would be available to make initial field contact with the complainant and collect preliminary site data. Following

the initial field contact and collection of site data, BLM would be responsible for coordination of the hydrogeologic/hydrochemical investigation. It should be noted that information provided by the two recent U.S. Geological Survey reports, including data on the hydrogeologic framework of the bedrock aquifers and baseline information relating to potential oil and gas contaminants, will prove valuable in resolving potential complaints (see page 3 for a summary of the reports). Groundwater investigations would follow procedures developed by the ODNR Division of Oil and Gas. These procedures have been documented in a Division manual providing guidance on conducting investigations for violations of Section 1509.22 of the Ohio Revised Code involving contamination of soil, surface water or groundwater, and diminished water supply as a result of oil-field operations. BLM would utilize hydrogeologic expertise from the U.S. Geological Survey, Columbus, Ohio; BLM National Applied Resource Sciences Center, Denver, Colorado; or others, as necessary. If, in the unlikely event, Division of Oil and Gas field inspectors/investigators are not available, BLM would perform initial field contacts and collection of initial site information and sampling data. It is assumed that the authority for issuance of water replacement orders would remain with the Division of Oil and Gas, or, in the unlikely event the Division no longer exists, this authority would be transferred to another division within the State government.

MONITORING

Section 4.5 of the Draft PA/EA outlined the purpose of a monitoring program. Public comments received during the 60-day review period reflected a need for more detail in regard to who will conduct inspections, when they would be done, and how often. Table D-3, "Inspections", in Appendix D of the Draft PA/EA outlined what inspections would be done during each phase of oil and gas operations. Some of the information presented in this table has been modified as a result of public comments and additional information received during public review of the Draft PA/EA.

Due to budgetary constraints, the ODNR has requested that all references to the Division of Oil and Gas' inspection or monitoring capability be deleted from the Draft PA/EA (see Appendix B, page 82). This is reflected in the table on the following page. In addition, the Trumbull County Soil and Water Conservation District Commissioner indicated in July, 1998 that his agency would conduct well site inspections under existing agreements with the Ohio Environmental Protection Agency and the ODNR Division of Oil and Gas (Brown, 1998). Well sites would be inspected during construction and drilling activities once per week to ensure proper sediment control.

Inspections

Federal Directional Wells or Private Wells in Federal Agreements				
Inspection Type →	Site Construction	Drilling	Production	Plugging/ Abandonment
Inspection Entity	(Frequency)	(Frequency)	(Frequency)	(Frequency)
BLM Environmental Specialist (from Milwaukee Field Office)	During construction 1-2 days	as needed	as needed	as needed
BLM Petroleum Engineering Technician (from Marietta, Ohio)	as needed	Setting of surface casing Blowout preventor tests 1 per week	Production accountability, including site security 1 per year	Setting of plug over producing formation Setting of plug below aquifers 1-3 days
ODNR Division of Oil and Gas Inspector	----	----	----	----
Trumbull County Soil and Water Conservation District	During construction 1 per week	During drilling 1 per week	----	----
Operator	daily	daily	every 1-2 days	daily

In addition to inspection entities shown above, Bazetta Township personnel would inspect oil and gas operations for compliance with township regulations. Bazetta Township inspections can be found on Table D-3, Appendix D in the Draft PA/EA. Certain Bazetta Township regulations would extend to Mecca and Greene Townships (see list on page 32-33). These regulations would be enforced by BLM through conditions attached to the drilling permit or as terms of the Federal agreement.

A more detailed discussion of these inspections follows under short- and long-term monitoring actions.

Short-Term Monitoring Actions

For federally permitted wells or private wells participating in a Federal agreement, site inspections will take place prior to any surface disturbing activities. During these inspections, the operator's proposed drilling and surface use plans would be discussed. Typical attendants at these inspections include a BLM representative; adjacent surface management agencies; other Federal/State/local entities, as appropriate, e.g. Natural Resource Conservation Service or U.S. Fish and Wildlife Service; the oil and gas operator; and the landowner. The proposed and/or staked well sites, tank batteries,

access roads, and pipeline locations will be analyzed so that site specific recommendations and mitigation measures may be developed and incorporated into the site construction/drilling proposal.

BLM's inspection program includes environmental, drilling, production and abandonment/reclamation related inspections. Inspections are prioritized based on a number of criteria. BLM will rank both environmental and drilling inspections as a high priority should wells be drilled in this area. BLM would be notified at the start of site construction activities and well drilling. BLM personnel would inspect site construction activities to ensure proper implementation of protection measures. Adjacent surface management agencies, surface owners, and other local, State or Federal agencies, as appropriate, would also be notified of inspections that may be scheduled.

Under the Clean Water Act, a permit is required for discharge of pollutants into the waters of the United States through the National Pollutant Discharge Elimination System (NPDES). NPDES permits are required for sites at least five acres in size. Since typical well sites are less than five acres in size, an NPDES permit is not required. However, operators are still responsible for implementation of best management practices to control runoff and soil erosion. Although a permit is not required, the Trumbull County Soil and Water Conservation District Commissioner has indicated that District staff would inspect well sites during site construction and drilling operations to ensure proper implementation of best management practices (Brown, 1998).

Drilling inspections would be conducted by BLM staff to ensure compliance with the conditions or terms of the approved drilling permit(s)/agreement(s). Inspections during drilling operations typically occur during critical phases of the drilling operation. This would include testing of the blowout preventer, witnessing the setting and cementing of surface casing, and compliance with air drilling requirements, if applicable.

Once the drilling is completed, the well would either be put into production or plugged and abandoned. Site restoration and reclamation would be done on those areas no longer needed for oil and gas related activities (for non-productive wells, the entire well site would be reclaimed as quickly as possible). BLM would inspect reclaimed areas on productive wells to ensure that the site is properly revegetated/stabilized. Once productive wells have been depleted, production equipment would be removed and the wells would be plugged and abandoned. Those areas used for production facilities would also be reclaimed. BLM would witness plugging operations. Prior to release of the Federal bond (for federally permitted wells) BLM would ensure that appropriate reclamation has taken place. This would either be done through a site inspection or consultation with the surface owner and adjacent surface management agencies. State bonds are also required. Bonds are detailed in Appendix D, Table D-2 of the Draft PA/EA.

Long-Term Monitoring Actions

BLM production inspections, conducted by a Petroleum Engineering Technician, are conducted once per year during the producing phase of a well. Inspections include an assessment of compliance with the conditions/terms of the permit/agreement, verification of production for royalty purposes, and a determination of whether site security, protection of public health and safety, and the general environment is adequate. BLM would coordinate monitoring efforts with the adjacent surface management agencies, where appropriate. Should the COE or ODNR observe problems or receive complaints specific to well sites or production facilities, BLM would be contacted and appropriate action would be taken to correct the situation.

During the production phase, regular inspection and preventive maintenance visits to the well and production facility would be made by the operator's well tender/pumper. These are opportunities for the operator to identify and quickly remedy problems that may occur.

AGENCY AND PUBLIC COMMENTS AND BLM'S RESPONSES

BLM received fourteen letters during the 60-day public comment and governor's consistency review period. In addition, one letter was received and accepted for the record after the comment period. Five of these letters were from government entities, including the U.S. Fish and Wildlife Service, Congressman Traficant's office, Trumbull County Sanitary Engineer's Office, Cortland City Fire Department, and the Bazetta Township Fire Department. The ODNR and COE, Pittsburgh District responded in their capacities as cooperators on the plan. The remaining eight letters were from members of the public. In accordance with the NEPA regulations (40 CFR 1503.4), BLM, is responding herein to comments which were deemed to be substantive in nature. Comments which voiced preference for or against a particular alternative or which stated unsubstantiated allegations were not considered substantive under the regulations.

Copies of letters received during the public comment period can be found in Appendix B (page 68). Substantive comments contained within the letters are underlined/highlighted in Appendix B and appropriate responses are provided below. These responses include the name/title of entity/person making the comment, the date the comment was received, a summary or direct restatement of the comment, and the response.

**CORTLAND CITY FIRE DEPARTMENT, WILLIAM C. NOVAKOVICH, CHIEF OF FIRE -
May 12, 1998**

COMMENT: Statements on page 4-73 of the Draft PA/EA under "Impact to Local Emergency Response Capability" could give a false sense of security. The

Department has responded to and handled emergencies in the past dealing with oil and gas wells. However, the Department lacks equipment and expertise to handle an incident that would directly contaminate a community's drinking water. If an incident involved contamination of the lake, the Department's response role would be limited due to lack of equipment.

RESPONSE: In addition to the response below, please refer to page 4-72, "Reporting Requirements", page 4-73, "Impact to Local Emergency Response Capability", pages D-15 through D-17, "General Reporting Requirements", "Oil Spills and Oil Spill Response", "Emergency Response (Other Than Spills)", and Table D-5, "Reporting Requirements for Crude Oil Spills" of the Draft PA/EA.

BLM did not intend to give the impression that local fire departments have all equipment and training necessary to respond to and handle an oil spill in Mosquito Creek Lake. BLM recognizes that the fire departments are an essential part of a much larger community of responders which would be mobilized to respond to an oil spill.

The fire departments and the oil and gas operator's personnel are usually the first responders to an oil release. The oil and gas operator is responsible for stopping the source of the spill and for containment and clean-up of the spill. The oil and gas operator is required to cooperate with and aid the fire department. Oil and gas operators have designated company personnel who are responsible for spill response, primary and back-up work forces, equipment, clean-up materials and contractors available on a 24-hour basis for spill response. Under regulations for Spill Prevention Control and Countermeasure (SPCC) Plans (40 CFR 112), operators are required to prepare an SPCC Plan for production facilities within six months of beginning operations and implement the Plan as soon as possible, but no later than one year after beginning operations. For mobile facilities, which include drilling rigs, SPCC Plans must be prepared and implemented prior to any activity. The operator's SPCC Plans outline names and phone numbers of company personnel, primary and stand-by work forces, and contractors that would be called into action, and list the local, State and Federal agencies that will be contacted in the case of a spill.

The focus of local responders is usually directed toward abating immediate threats to public safety and property. According to the Trumbull County Local Emergency Planning Committee (LEPC), backup support for local fire departments is available from the County HazMat Teams, the LEPC, and through mutual aid agreements with other departments and agencies (Bartlomain, 1998). Additional support could be provided by the Vienna Air Base emergency response team located at the Warren-Youngstown Regional

Airport (Bartlomain, 1998).

Ohio Environmental Protection Agency (OEPA) has State oversight for spills in navigable waters such as Mosquito Creek Lake and its tributaries. The OEPA Emergency Response Unit (ERU) has spill responders to aid in chemical identification, containment, cleanup, public safety, and identification of parties responsible for a spill. If a spill in water is reported, the ERU would dispatch an on-scene coordinator (OSC) to the spill site. The OEPA's Northeast District Office has 4 OSCs available on a 24-hour basis, year-round. In addition, the ODNR, Division of Oil and Gas would dispatch an oil and gas inspector to the scene. The Division's oil and gas inspectors are likewise available on a 24-hour basis, year-round. If the Division of Oil and Gas' inspector arrives first, the inspector would coordinate corrective action until the OEPA OSC arrives.

The OSC works with the Division of Oil and Gas, local fire department, HazMat teams, and any other responders to determine if the oil and gas operator is taking appropriate and timely measures to contain and clean up a spill. Either OEPA or the Division of Oil and Gas can require the operator to take additional measures or provide additional manpower and equipment. If the oil and gas operator cannot be identified or is unwilling or unable to undertake adequate and expeditious containment and clean-up actions, the ERU can activate a contractor to contain or clean up the spill. The Division of Oil and Gas can also activate contractors for spill containment or cleanup, but in the case of spills into navigable waters, the Division would leave this action primarily to OEPA. Both agencies have developed lists of spill response contractors that are available to respond on a 24-hour basis. OEPA would continue to monitor cleanup and remediation efforts until it was determined that all oil was adequately removed and that all areas had been adequately restored.

Similar response efforts would be made for dry land oil spills except that the Division of Oil and Gas would be the OSC throughout the spill response, containment, clean-up, and remediation efforts.

When incident response is beyond the capability of State response, U.S. EPA and/or U.S. Coast Guard is authorized to take response measures deemed necessary to protect the public health or welfare or the environment from discharges of oil or releases of hazardous substances, pollutants, or contaminants.

Oil spill response and emergency response are addressed in several levels of inter-related contingency plans:

- oil and gas operator SPCC Plans (oil spill contingency plan portion) for each production facility and HAZWOPER Emergency Response Plan;

- Trumbull County's Emergency Operations Plan, Annex P (Gas and Oil Well Emergency Response Plan) and Annex O (Hazardous Materials Emergency Response);
- Ohio Emergency Management Agency's Emergency Operations Plan and State Hazardous Materials Plan;
- the U.S. EPA Region 5 Oil and Hazardous Substances Pollution Contingency Plan (Region 5 includes Ohio and five other states); and
- the National Oil and Hazardous Substances Pollution Contingency Plan (Title 40 Code of Federal Regulations Part 300).

In general, the oil and gas operator plans identify personnel responsible for an emergency response or oil spill, available manpower, equipment, and contractors. In general, the county, State, regional, and national contingency plans outline reporting requirements for oil spills, hazardous material releases, or other emergency incidents, response agencies that would be activated, on-scene coordinator or incident command responsibilities, available resources, and the level of response action that would occur based on the size or type of incident.

The COE's Mosquito Creek Lake Operational Management Plan, Pollution Surveillance and Mitigation Section specifies notification of local fire and police departments and the OEPA-ERU and information to be provided in the case of an oil or chemical spill into the lake or on COE lands.

THOMAS F. HOLLOWAY, SANITARY ENGINEER - May 14, 1998

COMMENT: "Attached are the water quality standards from Ohio Administrative Statutes Rule 3745-1-07 that should be also reviewed and addressed with regard to Section 3.5 Water Resources of the Mosquito Lake Draft Planning Analysis/Environmental Assessment. These standards indicated there are limitations or impacts that exists (See Highlighted ones). These standards should be reviewed against what may be expected to occur from oil and gas development. Consideration should be given to air contaminant's (VOC's) possibly ending up in surface and ground water." (Note: Standards are not reproduced in Public Comment Letters.)

RESPONSE: We appreciate the updated copy of the State of Ohio's water quality standards. Table 3-3 in Section 3.5 of the Draft PA/EA has been updated accordingly, including the addition of the aquatic life standards (ALS) column for trace metals and volatile organic compounds (see Table 3-3 (revised), page 2 of this document). The BLM agrees that these standards do establish limits against which potential impacts may be measured. However, we disagree that these standards indicate that impacts exist. Analysis related to these standards is discussed on pages 2-3.

With regard to VOCs, please refer to Section 4.2.7, pages 4-48 and 49, of the Draft PA/EA. The maximum annual VOC emissions that could be generated by oil and gas operations resulting from leasing is 12 tons per year. The OEPA projected that annual emissions from point, area, and mobile sources in Trumbull County would be 16,086.28 tons per year in 1993/94 and 16,118.035 tons per year in 2006. An additional emission of 12 tons represents an increase of only 0.07% to 0.08% over the total emissions for 1993/94 and 2006. It would not be possible to distinguish changes in water quality caused by such a small increase in VOCs from changes caused by the much larger existing background levels of VOCs generated by point, area, and mobile sources.

RICHARD LEE STAHL - May 18, 1998

COMMENT: A spill and a fire occurred at a production facility in spite of the facility being built to existing codes; the fire could not be extinguished because the dike was full of oil and application of a water spray to cool the metal equipment caused flaming oil to flow out of the dike; what would happen if a dike were full of oil and a rain storm caused the oil to spill out and contaminate the water supply?

RESPONSE: Please see Appendix A, page A-12 of the Draft PA/EA. Per Title 43 Code of Federal Regulations, Part 3160, Subpart 3162.7-1, Disposition of Production, accumulation of oil inside the dike is not permitted except in emergency situations. BLM will require that all tank batteries be surrounded by an impervious dike capable of containing 200% of the total volume of the storage tanks in the battery. This will provide more than sufficient storage capacity in the case of rain events. In order to minimize the chance of vandalism at wells and tank batteries, BLM will require that wellheads and tank batteries be secured by fencing with locked gates and access roads with a locked gate or cable to limit access (see page A-17 of the Draft PA/EA). Gate keys would be made available to BLM, the township Zoning Inspector, if applicable, and the fire department.

KATHY MACHINGO - May 26, 1998

COMMENT: "The EA/PA does not adequately address all the issues. The EA/PA clearly minimizes the risk of groundwell contamination, air quality, and noise pollution in having a total disregard for the people in the demographic area affected."

RESPONSE: The Draft PA/EA used all available information. Sections 4.2.4 and 4.2.7 include analyses related to potential impacts to groundwater and air quality, including impacts from noise. Risk assessments documented in the Draft PA/EA were based on historical data. For discussion of risk assessment, see RESPONSE to COMMENT from Mr. Hernon (page 85 of Warren transcript), page 45.

COMMENT: The Draft PA/EA "does not address the use of or prohibition of radioactive materials by the drilling companies."

RESPONSE: After completion of drilling operations and prior to emplacement and cementing of the production casing, logging tools are lowered down the borehole. During retrieval of the logging tools, measurements are recorded that enable geologists to interpret the thickness, reservoir properties and fluid content of rock formations penetrated by the borehole.

Some logging tools contain encapsulated radioactive sources that emit radioactive energy after being lowered down hole. Radioactive material is not injected into the borehole during this process. The Nuclear Regulatory Commission tracks all radioactive materials used by the logging industry. Radioactive materials are transported according to U.S. Department of Transportation regulations. Sources are sealed during transportation and opened only when the tool is lowered in the borehole on a wireline. During transportation and on the land surface, the tools do not emit any detectable release of radioactive energy. Logging tools have been routinely used in Ohio since 1940 without any health or safety threatening incidents (Kell, 1998).

A typical "Clinton sandstone" log suite includes gamma ray, neutron and density logs. The gamma ray tool does not have a radioactive source and simply records the natural emission of gamma radiation from rocks penetrated by the borehole. Primarily, the tool records the emission of gamma rays from unstable isotopes in the uranium-radium series, thorium series and potassium 40. These elements tend to concentrate in clay-shales such as the Bedford Shale that separates the Cussewago and Berea Sandstone aquifers and the Ohio Shale that underlies the Berea Sandstone.

Unlike the gamma ray tool, the neutron and density tools each have a double-encapsulated radioactive source. The neutron logging tool emits neutrons, typically from an Americium 241, Beryllium 9 or Radium 226 source. The neutrons are adsorbed by the nuclei of atoms in the fluids and solids in the well bore, and the tool records the resultant emission of low energy neutrons or gamma radiation. The density logging tool emits gamma radiation and records the intensity of gamma radiation reflected back by rock formations penetrated by the borehole.

COMMENT: "You [BLM] used outdated and inaccurate statistics in preparing the report to skew the outcome to the desired net effect."

RESPONSE: Information presented in the affected environment for wildlife, in general, was obtained from a 20 year old plan. However, the information about wildlife types and distribution is still valid. Descriptions of the existing

environment were reviewed by ODNR staff and recommended changes, representing current information, were incorporated into the sections prior to releasing the Draft PA/EA. Information used to develop the sections on special status species, wetlands and fisheries/aquatic animals is more current as is indicated by the references. Special status species information was based upon communication with both ODNR and the U.S. Fish and Wildlife Service (USFWS) from 1996 to the present.

Four additional State listed species/concentrations of breeding animals were identified through comments recently provided by the ODNR. These species were added to Table 3-4 of the Draft PA/EA, which lists special status species that may be present within or near the planning area (see RESPONSE to COMMENT letter from ODNR, pages 21-22, and also Table 3-4 (revised), page 6). BLM did not conduct field surveys or site observations. The determination of whether or not special status species occur, or may occur, was based upon documented site observations provided by ODNR and USFWS. It should be noted that if leasing occurs, site specific assessment at the time a well site is proposed would identify the existence of special status species or their habitat. BLM recognizes the ODNR and USFWS as the subject matter experts in the area of special status species.

DONALD WALDRON, ASSISTANT CHIEF TRUMBULL COUNTY HAZMAT, ASSISTANT CHIEF BAZETTA FIRE DEPARTMENT - June 4, 1998

COMMENT: Trumbull County Hazardous Materials Team has never been consulted but was mentioned as a response agency in the Draft PA/EA.

RESPONSE: BLM consulted directly with Mr. Joseph Bartlomain, the Emergency Coordinator and Information Coordinator for the Trumbull County Local Emergency Planning Committee (LEPC) and the Director of the Trumbull County Emergency Management Agency (TCEMA). He provided BLM information concerning the HazMat teams that are available for emergency response in the county.

JAMES ROBINSON - June 8, 1998

COMMENT: "First everyone is concerned about the Balled Eagles in the game reserve. The proposed pipeline is slated to run rite through these endangered anamels habitate."

RESPONSE: The COE may approve permits for pipelines on a case-by-case basis. The document does not state that a pipeline has been proposed to run through bald eagle habitat. Bald eagle breeding and wintering habitat occurs within the Mosquito Creek Lake Wildlife Refuge and the larger Wildlife

Management Area. Drilling and development will not occur within these areas, and it is unlikely that well drilling and development would occur adjacent to this habitat. Drilling and development of Federal wells on private land would not be approved within one-half mile of active nest sites or established nesting territories.

COMMENT: "We are not hurting for these fossil fuels to justify the drilling."

Drilling and producing oil and gas is a very costly and economically risky venture. Planning and funding of oil and gas projects require many months, and sometime years, before anything is done on the lease itself. Leasing before emergencies or shortages develop gives oil and gas companies a reasonable amount of time to logically develop a property and ensures a continuous supply of energy at a reasonable cost to meet the public demand. Waiting until a shortage develops, like the oil embargoes of the 1970's, results in skyrocketing energy prices. In addition, BLM's policy is to foster and encourage private enterprise to orderly develop a stable domestic energy supply. BLM makes lands available for development of mineral and energy resources in a manner that is in balance with other land uses.

OHIO DEPARTMENT OF NATURAL RESOURCES - June 10, 1998

COMMENT: "The Division of Natural Areas and Preserves reviewed the Mosquito Creek Lake EA for rare species, special nature features and significant natural areas. The numbers and letters on the list below correspond to the areas marked in red and blue on the accompanying maps." (Note: Maps are not reproduced in Public Comment Letters.)

RESPONSE: The following State listed species/concentrations of breeding animals have been added to Table 3-4, "Special Status Species Which May be Present Within or Near the Mosquito Creek Lake Project Area" (see page 6):

False hop sedge - threatened
Hobblebush - species of concern
Great blue heron - breeding animal concentration
Cliff swallow - breeding animal concentration

COMMENT: "However, we believe that mitigation measures should also be specified within this section for the Eastern Massasauga and the other species and features listed above."

RESPONSE: The following two mitigation measures have been incorporated into Appendix A as special mitigation measures (see Appendix A, page 62-63).

- Removal of hobblebush will be avoided.
- Disturbances in massasauga habitat will be avoided or seasonal restrictions will be applied. Site inspections will be made to determine the potential for the presence of the massasauga or its habitat. If indicated, a survey would be required to document that the massasauga does not inhabit the area. If it is determined that the massasauga is present or potential habitat exists, surface disturbance will not be permitted from mid April through the end of October. Surface disturbance would also not be permitted if a site is identified as massasauga winter habitat.

Specific mitigation measures were not identified for some of the special status species, i.e. river otter, osprey, northern harrier, king rail, Virginia rail, great blue heron colony, clubshell mussel, cliff swallow colony, because they inhabit no surface occupancy areas which include the Wildlife Area and COE property (see Map 3 of Draft PA/EA). Mitigation measures developed for wetlands would also protect the following special status species: false hop sedge, clubshell mussel, eastern sand darter, oak-maple swamp.

COMMENT: "Under Alternative B, Subsurface Limitations, Page B-21, #5, ODNr believes that the Division of Parks and Recreation (DPR) should be included in addition to private mineral owners."

RESPONSE: It is appropriate to include ODNr Division of Parks and Recreation in the above referenced section.

COMMENT: "The ODNr, Division of Oil and Gas disagrees with the statement on Page 3-14 that "The Berea was the main oil and gas reservoir in the Mecca pool, and shows of oil, gas, and other contaminants are far more common in the Berea than in the Cussewago." Based upon our review of historical records and prepared cross-sections, we believe that oil and/or gas commonly occur in both formations."

RESPONSE: Comment noted. The recently completed U.S. Geological Survey report (USGS, 1998) acknowledges this disagreement and notes that oil was produced from both the Berea and Cussewago sandstones.

COMMENT: On page 2-8 of the Draft PA/EA (paragraph 4), "2 feet by 50 feet" should read "20 feet by 50 feet."

RESPONSE: Correction noted. BLM list of corrections dated 5/19/98 corrected this to read "25 feet by 50 feet".

COMMENT: "Since completion of the draft Planning Analysis/Environmental Assessment (PA/EA), the Division of Oil and Gas has become aware that declining

revenues may require significant staff reductions, up to 40 percent by FY 2000, that would jeopardize our ability to maintain prior inspection commitments. Specifically, if additional funds cannot be secured between now and FY 2000, the Division of Oil and Gas will terminate its ground water investigation program. Subsequently, the Division would refer all citizen complaints alleging contamination of private water supplies to the BLM or the County Health District Sanitarian. Furthermore, if the current revenue problems results in reductions in our field enforcement staff, ODNR cannot ensure that inspectors will be available to assist with specific site reviews, or that they will be available to enforce compliance with permit conditions. In light of these uncertainties, ODNR requests that all references to our inspection capability be deleted from the PA/EA."

RESPONSE: Given the ODNR Division of Oil and Gas' budgetary constraints, it is uncertain as to whether the Division will have hydrogeologists available to conduct groundwater investigations in relation to proposed leasing at Mosquito Creek Lake. Due to the fact that future Division funding levels and sources are unknown, an alternative means of implementing the investigation process has been developed. Under this alternative, an assumption is made that not all staff capability within the Division of Oil and Gas would be lost as a result of budgetary constraints. It is assumed that Division of Oil and Gas inspectors/investigators would be available to make initial field contact with the complainant and collect preliminary site data. Following the initial field contact and collection of site data, BLM would be responsible for coordination of the hydrogeologic/hydrochemical investigation. It should be noted that information provided by the two recent U.S. Geological Survey reports, including data on the hydrogeologic framework of the bedrock aquifers and baseline information relating to potential oil and gas contaminants, will prove valuable in resolving potential complaints (see page 3 for a summary of the reports). Groundwater investigations would follow procedures developed by the ODNR Division of Oil and Gas. These procedures have been documented in a Division manual providing guidance on conducting investigations primarily for violations of Section 1509.22 of the Ohio Revised Code involving contamination of soil, surface water or groundwater, and diminished water supply as a result of oil-field operations. BLM would utilize hydrogeologic expertise from the U.S. Geological Survey Columbus, Ohio; BLM National Applied Resource Sciences Center, Denver, Colorado; or others, as necessary. If, in the unlikely event, Division of Oil and Gas field inspectors/investigators are not available, BLM would perform initial field contacts and collection of initial site/sampling data. It is assumed that the authority for issuance of water replacement orders would remain with the Division of Oil and Gas, or in the unlikely event the Division no longer exists, this authority would be transferred to another division within the State government.

With respect to inspections, all references to the Division of Oil and Gas'

inspection capability (Section 4.5, Monitoring, and Appendix D, Table D-3) for Federal wells is considered deleted from the text of the Draft PA/EA. In the event the Division of Oil and Gas is unable to conduct inspections, BLM is committed to conducting inspections for any wells (private or Federal) that may be drilled as a result of a leasing decision at Mosquito Creek Lake. These inspections are outlined in the revised Monitoring section on page 11.

U.S. ARMY CORPS OF ENGINEERS - June 10, 1998

COMMENT #1: "Section 2.4, CRA's/CA's (Federal Agreements). It might be a good idea to add "NEPA Compliance" to the title of this section . . . Also recommended is a brief discussion comparing the process for reviewing APD's for Federal wells versus the procedures discussed for CA's and CRA's (the types of Federal agreements required for wells tapping both Federal and private resources)."

RESPONSE: Comment regarding title of section is noted. The process for reviewing APDs for Federal wells versus the procedures for CAs and CRAs is discussed on page 9.

COMMENT #2: ". . . note its (the Clinton sandstone zone) depth below the Cussewago sandstone . . ."

RESPONSE: The top of the Clinton sandstone zone is everywhere more than 4,000 feet beneath the base of the Cussewago sandstone. In the southern part of the area, the Clinton is about 4,200 feet beneath the base of the Cussewago.

COMMENT #3a: COE recommended stressing that the figures and wetlands maps are approximations based on a number of sources. Wetland maps and acreage determinations are approximations based upon the best available information. However, they are not exact. Site specific analysis by the COE Regulatory Branch would be required for proposed well sites to determine possible wetlands impacts.

RESPONSE: Comment noted.

COMMENT #3b: It was recommended that the terms "Planning Area" and "Project Area" be added to the glossary.

RESPONSE: Comment noted. These terms are currently listed in the glossary under Mosquito Creek Lake Planning Area and Mosquito Creek Lake Project Area.

COMMENT #4: Section 3.8, Noise. - A table which summarizes existing noise levels measured at various sites around the Mosquito Creek Lake Project would provide good basis for comparison with Tables 3-6 and 3-7 in the Draft PA/EA.

RESPONSE: See Table titled "Noise Levels Measured at Various Sites Around the Mosquito Creek Lake Project", page 7.

COMMENT #5: Table 4-1, "Special Status Species", Page 4-12 of the Draft PA/EA - In addition to the distance set-back mitigation measures mentioned, we would like to retain the option of making additional seasonal restrictions if site conditions warrant. For example, we may want to restrict drilling activities during the early portion of the bald eagle nesting cycle (most likely January to early February). We would coordinate with ODNR regarding the need for such a restriction and the exact timing of it.

RESPONSE: Due to the fact that site specific well sites are not known at this time, it is difficult to identify what type of seasonal restrictions may be necessary. Site specific analysis at the time well sites are proposed would be the appropriate time to assess this need. If impacts to special status species cannot be mitigated, drilling permits or Federal agreements would not be approved. The U.S. Fish and Wildlife Service, ODNR, and BLM believe that the restrictions identified for bald eagles are adequate to protect them. The term "active nest site", as used in the Draft PA/EA, was used to identify a nest site which has been in use from one year to the next, not just a nest which has a pair on the nest at the time an activity is proposed. The intent is to exclude drilling and development within one-half mile of the nest regardless of the time of year. The same restriction applies to established but unoccupied nesting territory.

COMMENT #6.

- 1) Concern that expansion of fissures in the rock of the production zone during hydrofracturing will "reactivate" improperly plugged or abandoned wells, possibly causing abandoned wells to flow to the surface and allow hydrocarbon reservoir fluids to reach the lake.
- 2) "We recommend that a determination be made as to the existence of plugged or abandoned gas wells in the planning area, particularly in the area that is now the lake bottom."
- 3) "In addition, the document should state that the issuance of any permit to drill does not authorize the driller to use "four spot" drilling/secondary recovery methods."

RESPONSE 1) and 2): Hydrocarbon production can be increased when fractures in the producing formation are extended to the planned length, and fracturing fluid is retained within the zone of interest. The volume of fracturing fluid and the rate this fluid is injected affects the extent of fractures from the wellbore. Fractures that break out of the zone increase the risk of excess water production with the hydrocarbon. Since it is undesirable for fractures to extend beyond the producing formation, industry designs fracture

treatments to accomplish this goal.

The first oil wells were drilled in the Mecca Pool around 1860. There are likely to be old, unplugged and unrecognizable Berea/Cussewago wells in this area, but according to U.S. Geological Survey studies, it is unlikely that any of them are in the flooded valley of Mosquito Creek (USGS, 1998). Some oil operations conducted in the area in the last century may have consisted of wells drilled laterally into the Berea outcrop, flowing by gravity into tanks lower in the valley. Such production methods were commonly used in the Appalachians during that time. There is approximately 4,400 feet of confining shale, salt and limestone deposits between the Berea/Cussewago sandstones and the Clinton formation. These intervening formations, in addition to the fact that these shallow aquifers would be protected by surface casing, would prevent "reactivation" of these old wells.

Clinton wells are subject to State spacing and setback requirements which set a minimum of 1,000 feet between wells in the Mosquito Creek Lake area. At this distance, hydrofracturing might allow communication, i.e. establish a reservoir pressure pathway, between wells, but could not "reactivate" an abandoned well even if improperly plugged. Because the Clinton sandstones in this area are believed to consist of "lentils" of sand separated by shales, the two wells would have to be completed in the same "lentil" for such an event to occur. In addition, hydrofracturing of the Clinton sandstone typically produces vertical fractures in the producing formation. Horizontal, or "pancake", fractures radiating from the wellbore are not typical. It should be noted that plugged and abandoned Clinton wells that exist in the vicinity of Mosquito Creek Lake are located at a distance of ½ to 1 mile away from the lake. Any wells that may be drilled as a result of leasing would be drilled between these abandoned wells and the lake. Therefore, any communication between these wells would not result in oil flowing from the wellbore into the lake. The Clinton wells in the area are very low-pressure wells, even when first completed. Should an abandoned, improperly plugged Clinton well somehow begin to flow, the brine and admixed hydrocarbon could reach neither the surface nor the deepest fresh water aquifers.

RESPONSE 3): Clinton sandstone in this area produces only small amounts of oil, thus secondary recovery operations would not be economically feasible and will not occur. There is no resemblance between this small gas field and the Bradford oil field of northwestern Pennsylvania, which has been in continuous production since 1860 from as many as 40 different producing zones.

COMMENT #7: Section 4.2.10, Socioeconomics. Figures for Federal royalty payments as stated in the text on page 4-63 of the Draft PA/EA don't correspond to 12.5% of hydrocarbon revenue figures represented in Tables 4-10 and 4-11, pages 4-

RESPONSE: Royalty values for Alternatives A and B were generated by BLM staff using the Advanced Reserves Information and Evaluation System (ARIES) software program. The royalty model incorporated the following assumptions: 1) each well would recover 250,000 Mcfg (million cubic feet of gas) over an estimated 12 to 19 year producing life (the average reserves and life for a well in the area); 2) each well will produce oil at a rate of 5.56 barrels per million cubic feet of gas; 3) each well would receive \$2.40/Mcfg and \$18.00/BO (barrel of oil) for sale of product; and 4) each well will have an initial production rate of 2,500 Mcfg/month, which exponentially declines at 12%. These assumptions provided a figure of \$625,020 per well for total hydrocarbon production revenue. Twelve and one half percent of this figure yielded the Federal royalty value per well, which was divided by 50% owing to the assumed existence of compensatory royalty agreements with private surface owners. The result was then multiplied by 14 to obtain the final Federal royalty value of \$541,000 (adjusted according to the ARIES software) for Alternative A. For Alternative B, the Federal royalty value per well was multiplied by 27 (additional number of wells over 14), and the result then added to the final value obtained for Alternative A, thus yielding \$2.629 million as total Federal royalty payment per Alternative B. The final figures for both Alternatives would be multiplied by 75% to obtain the total royalty revenue value that would be returned to the State of Ohio.

Hydrocarbon revenues from sales (first column, Tables 4-10 and 4-11, pages 4-63 and 4-64 of the Draft PA/EA) were obtained by multiplying the figure for total hydrocarbon production revenue per well (\$625,020) by the number of wells for each Alternative. Twelve and one half percent (the Federal royalty rate) of these figures would not accurately represent expected Federal royalty payments because, as the above explanation describes, Federal royalty figures for any wells in the area of Mosquito Creek Lake must be adjusted to reflect compensatory royalty agreements and variable rates of hydrocarbon production over the life of the wells.

COMMENT #8: Section 4.2.10, Socioeconomics. This section of the Draft PA/EA does not adequately address economic and employment impacts to Trumbull County in the event that leasing would occur.

RESPONSE: Total Federal royalty payments were computed over 22 years for Alternative A, and over 17 years for Alternative B (Refer to RESPONSE to COMMENT #7 above). Total royalty payments to the State Treasury are estimated to be 75% of \$541,000 or \$405,750 for Alternative A, and 75% of \$2.629 million or \$1.972 million for Alternative B. Note that these figures represent royalties only and do not include rentals and bonus payments.

Royalty revenues returned by the Ohio State Treasurer to the Trumbull County Treasurer would differ from year to year given the variable annual rates of production from each well. It is the responsibility of Trumbull County to determine what portion of revenues will be allocated to Trumbull County's roads, schools or townships.

The employment impacts generated by the RIMS II model reflect estimates for new jobs that may be created, Statewide, over the term of either Alternative. At the local level, employment would be immediate and most considerable during construction and drilling at the well sites. Thereafter, fewer local jobs would be required to service the wells and maintain access roads.

COMMENT #9: Section 4.2.12 of the Draft PA/EA, Public Health and Safety - Emergency response capability: a) The public has a great deal of concern about the capability of local emergency personnel to respond to incidents at gas well sites; recommend that "Local Emergency Response Capability" section on page 4-73 of the Draft PA/EA be expanded to include additional detail on: what type of unit they are (paid or volunteer), the equipment they have available and the training their personnel have received; and, b) If local emergency response is deemed inadequate, BLM should consider funding equipment/training at the local level in support or disaster response effort. Has the possibility of utilizing the professionally trained and equipped emergency response teams such as at Youngstown-Warren Regional Airport been investigated?

RESPONSE: See also BLM RESPONSES to COMMENTS from Mr. Vogel (page 78-80, Warren transcript, pages 51-52 and page 58, Cortland transcript), pages 44, 49 and 50, and RESPONSE to COMMENT letter from the Cortland City Fire Department, page 14.

BLM has not received evidence that local emergency response capabilities are inadequate. As indicated in the responses referred to above, the local response agencies are part of a much larger response community. Emergency operations contingency plans exist at the county, State and Federal level. These emergency operations contingency plans often include the oil spill and hazardous material contingency plans referred to in the responses noted above. For emergencies such as fires or explosions, the local fire departments and the oil and gas operator would usually be the first responders to the incident. An ODNR, Division of Oil and Gas inspector would be dispatched to a scene that involves substantial risk of harm to public health and safety or damage to the environment. The inspector would provide coordination between the oil and gas operator, emergency response personnel and the public. The inspector would evaluate the effectiveness of remediation efforts. Depending on the type of emergency incident, additional backup is available to local fire departments through the county HazMat teams, the LEPC, mutual aid agreements with other

agencies and departments, and the Vienna Air Base emergency response team (Bartlomain, 1998). If an emergency incident exceeds the capacity of local government, local government can request the assistance of the State through the Ohio Emergency Management Agency.

The TCEMA/LEPC regularly runs emergency preparedness exercises for a variety of emergency incidents in the county. These exercises, which can involve as many as 200 people, are used to evaluate the effectiveness of the local emergency response community and identify areas that need to be improved (Bartlomain, 1998). The TCEMA/LEPC has preliminary plans to run an emergency preparedness exercise for an oil and gas incident sometime in the fall of 1998.

COMMENT #10: Section 4.2.12, Public Health and Safety Bonding of the Draft PA/EA. The statement that BLM will require additional bonding if an operator poses a risk leaves too much to the discretion of BLM. The COE's experience on the Allegheny National Forest suggests that bonding in excess of the amounts listed is necessary.

RESPONSE: Please refer to pages 4-73 and 74 of the Draft PA/EA, "Liability and Bonds", and Table D-2 on page D-7 and 8 of the Draft PA/EA. BLM views the Federal bond as a performance guarantee, not replacement cost insurance. BLM has authority to increase the Federal bond to the amount necessary to cover the entire cost of surface reclamation and plugging of a well. This increase can be required at any time during the life of the well. BLM would increase the bond only if there is a demonstrated and justifiable need to do so.

The BLM Milwaukee Field Office has roughly 800 operating Federal wells within its jurisdiction. In the past 15 years, the Field Office has only encountered one situation in which it was necessary to claim the Federal bond. This demonstrates the rarity of such circumstances.

The situation cited on the Allegheny National Forest cannot be directly compared to the Mosquito Creek Lake situation. No Federal oil and gas leases were involved. The BLM did not have any regulatory authority over the wells. The wells were on outstanding and reserved mineral rights subject to private oil and gas leases. These wells were subject to whatever bonds may have been required by the U.S. Forest Service for surface restoration (per Secretary of Agriculture Rules and Regulations for reserved mineral rights) and by the Commonwealth of Pennsylvania for well plugging.

COMMENT #11:

1) Section 4.3, Cumulative Impacts of the Draft PA/EA. "It is noted in the report

that 42% of the land adjacent to and within one-half mile of the project area is considered a "natural area". Although that term is not clearly defined, it is assumed that "natural areas" are comprised of a number of different types of habitat, from meadows to forests. . .".

2) "One of our concerns regarding oil and gas drilling at any project is the potential for habitat fragmentation, particularly involving conversion of forested land to the open areas associated with access roads and well sites."

3) The COE stated that it would be beneficial if the land use classification chart could be tied in with probable well locations, recognizing that exact locations cannot be determined at this time.

RESPONSE 1): Map 5, page 3-4 of the Draft PA/EA is a composite of data layers from three sources. Land use/land cover data was taken from: 1) the Ohio Capability Analysis Program (OCAP) (1977); 2) the Ohio Land Cover Inventory from the ODNR (1994); and 3) the COE Vicinity Inventory Map (Plate 4) from the Mosquito Creek Lake Master Plan (1994). Data from these three sources were compared and land use classifications were broadly grouped into the categories corresponding to those found on the COE Vicinity Inventory Map. In general, the areas identified as "natural areas" on Map 5 of the Draft PA/EA include areas identified as recreation, parks, water control, shrub and brush rangeland, deciduous forest land, evergreen forest land, wetlands, wet meadows, shallow marsh, and transitional areas.

RESPONSE 2): The potential for habitat fragmentation was considered during the analysis process. As stated on page 3-22 of the Draft PA/EA, the largest and most extensive blocks of forested habitat occur within the Mosquito Creek Lake project area and would not be impacted by drilling and development since the project area is a no surface occupancy area. This statement should also have included the State Wildlife Area, which is also a no surface occupancy area. As stated in the comment letter, the total acreage disturbed by drilling and development is low compared to the total acreage of the planning area. And, more specifically, it is likely that only a portion of the disturbed acreage would be in forests. See RESPONSE 3 below for more information on probable well site locations.

RESPONSE 3): Page B-13 of the Reasonably Foreseeable Development Scenario in the Draft PA/EA identifies the assumptions that were used in identifying potential well locations. Possible occupancy sites on private land include existing producing well sites and areas classified by the ODNR as "agricultural", "open space", "natural area" (non-wetland), and "residential". Actual availability depends on whether oil and gas companies obtain surface owner permission. Each development potential area was evaluated for potential surface locations for oil and gas operations by taking into account existing land use patterns, location of existing oil and gas wells, and State spacing

requirements.

COMMENT #12: Section 4.4, "Summary of Anticipated Impacts", Table 4-15 of the Draft PA/EA. It would be informative to indicate in Alternative B the projected royalties going to the local communities in this section of the chart.

RESPONSE: Please see **RESPONSE** to **COMMENT #8** from COE letter, page 27.

COMMENT #13a: Section 4.5, Monitoring of the Draft PA/EA. Comment questions whether there is any difference in the level of monitoring effort expended with regard to whether the well is draining all Federal minerals or if it is part of a Federal agreement.

RESPONSE: There is no difference in the level of monitoring effort expended with regard to whether the well is draining all Federal minerals or if it is part of a Federal agreement. Please refer to page 11 of the revised Monitoring section.

COMMENT #13b: A more thorough explanation is requested regarding how BLM and ODNR will assure that wells will be plugged properly once they are taken out of production. This explanation should include a discussion of steps that will be taken in plugging a well developed by an operator that subsequently goes bankrupt.

RESPONSE: Federal wells would be plugged according to the standards outlined in BLM Onshore Order No. 2. All formations bearing usable-quality water, oil, gas, and/or prospectively valuable deposits of minerals would be protected. Private wells, which may produce Federal oil and gas through an approved Federal agreement, would be plugged according to standards outlined in Ohio Oil and Gas Law, Chapter 1501 of the Ohio Administrative Code, and Ohio Oil and Gas Rules - Plugging of Wells, 1501:9-11-01 through 1501:9-11-12. Ohio plugging regulations state that upon abandonment, every well must be plugged in a manner that confines oil, gas or water in the reservoir rock in which it occurs or originates. Well owners are required to notify BLM and/or the ODNR Division of Oil and Gas before commencing all plugging operations. Plugging methods are approved or prescribed on a site specific basis, based upon well completion records regarding the depth and fluid-bearing characteristics of the rocks penetrated by the borehole. Generally, rotary drilled wells are plugged by placing cement across all oil, gas or brine bearing zones, as well as fresh water aquifers. Drilling mud is placed in the non-cemented intervals. After completion of the plugging operation, the surface casing is cut off below grade and a plate is welded in place to permanently identify the well. BLM inspectors would witness all plugging operations. In the event the operator of a Federal well goes bankrupt and there

is evidence that the well is causing either surface or downhole contamination, BLM would immediately recover the bond, plug the well, and incur the costs associated with plugging operations. If no immediate threats to public health and safety exist, BLM would initiate actions as described in the first full paragraph on page 4-74 of the Draft PA/EA to acquire funds to have the well plugged and abandoned properly.

COMMENT #14: Appendix A, Oil and Gas Development Constraints and Special Mitigation Measures of the Draft PA/EA. There is inconsistency between the statement in Appendix A which mentions that certain Bazetta Township regulations will be extended to Mecca and Greene Townships and what is specifically written into the body of the Draft PA/EA under the corresponding impacts and mitigation measures.

RESPONSE: Appendix A, Table A-1, page A-9 of the Draft PA/EA, in a general sense, identifies those Bazetta Township regulations which will be extended to Mecca and Greene Townships. These requirements were incorporated into the list of special mitigation measures outlined in Appendix A of the Draft PA/EA. Below, for clarification purposes, we have specifically identified those requirements from Bazetta Township regulations (Section 28: Gas and Oil Well Regulations) which would apply to operations conducted in Mecca and Greene Townships.

For new access roads, operators must notify all occupants within 200 feet of the well site access road that drilling activity would be commencing and provide an approximate time table for it. For an existing road, the operator must notify occupants inside the drilling unit (Bazetta #3.B.ix).

Access road shall be a minimum of 100 feet from the nearest residence building outside the drilling unit and a minimum of 50 feet from the nearest residence building within the drilling unit unless prior written consent of all property owners within the drilling unit has been obtained and submitted to BLM and the township Zoning Inspector, if applicable (Bazetta #3.B.ix).

The tank battery and related production equipment shall be located not less than one hundred and thirty (130) feet from any residence building outside the drilling unit, and not less than one hundred (100) feet from any residence building inside the drilling unit (Bazetta #5).

The well head and tank batteries and related production equipment must be enclosed with a six (6) foot high chain link fence with a locked gate, three (3) strands of barbed wire at the top with a clearance of four (4) feet from the limits of the equipment (Bazetta #5).

Water well testing requirement - Bazetta Township's requirement has been strengthened and rewritten. Specific requirement can be found on page A-13 of the Draft PA/EA (Bazetta #6A).

Each access road to the drill site or tank battery shall have a fence with a locked gate or cable limiting passage to applicant's personnel, landowner, Zoning Inspector (if applicable), Fire Department, and appropriate State/Federal inspectors (Bazetta #7B).

Each tank battery shall be placed on five (5) inch bed of limestone and/or natural stone (Bazetta #7C).

All tank battery sites, fence, and surface equipment shall be made of non-corrosive material or painted with a weatherproof paint. These components shall be maintained throughout the life of the well (Bazetta #7D).

All access roads must be properly graded and surfaced with gravel or paving material to prevent mud from getting to State, county, and township roads, and to minimize dust from forming during use of the access road, and if reasonably required by Fire Chief, be of sufficient width with turnarounds to allow ingress and egress for safety equipment (Bazetta #7E).

BLM would not allow any producing well located adjacent to COE or ODNR developed recreation areas to emit noise which, when measured at the nearest developed recreation area, exceeds 45 dB(A) (Bazetta #8.1).

Tank battery facilities would be evaluated on a case-by-case basis. If necessary, vent stacks on oil storage tanks would be fitted with activated charcoal filters. Such filters shall be cleaned or replaced as needed to adequately suppress odor (Bazetta #8.2).

Vibrations which are perceptible without the aid of an instrument shall not be permitted beyond the drilling unit (Bazetta #8.3).

COMMENT #15: Appendix B, Reasonably Foreseeable Development Scenario of the Draft PA/EA. Summary 1- RFDS Under Alternative A. Need to clarify the fact that BLM can attach protection measures to the Federal agreement (CRA) or refer reader to Section 2.1 of Draft PA/EA.

RESPONSE: Comment noted. This has been clarified through the section titled "Approval of Federal Agreements/Drilling Permits" on page 9.

COMMENT #16: "The draft PA/EA avoids the issue of containment, and disposal of saline cuttings is only addressed with a few comments like: "In addition, BLM would

require segregation of all saline cuttings, if warranted." (Page 4-33, para 5), and "The fate of pit cuttings and liner would remain a negotiable item to be addressed at the time specific proposals are received . . ." (Page 4-33, para 6). This discussion avoids any mention that the primary drilling target at Mosquito Creek is the Clinton Sandstone, and to reach this formation requires drilling through the saline formation of about 750 feet of halite. The containment issue is not acknowledged in the draft PA/EA; one only knows that it is a negotiable item. Similarly, the saline group is not mentioned in the discussion of geology and stratigraphy."

RESPONSE: The Draft PA/EA does address the Clinton sandstone as the primary drilling target. Page B-1, Appendix B of the Draft PA/EA describes the Clinton sandstone as one of two most likely drilling targets. The Draft PA/EA states that the second drilling target, the Rose Run Sandstone, has low oil and gas development potential over the entire planning area. Map 4, page 2-6 of the Draft PA/EA shows high, moderate and low development potential areas for the Clinton sandstone. The Draft PA/EA states the Clinton sandstone is the only economically producible zone in the planning area (Section 2.6 and Appendix B of the Draft PA/EA). Typical oil and gas operations described in Appendix B are for Clinton well drilling, with any difference for Rose Run drilling so noted. The Reasonably Foreseeable Development Scenario (RFDS) estimates 13 to 40 Clinton wells, depending on the alternative, and only one Rose Run well under either alternative.

Presumably the "saline formation of about 750 feet of halite" referred to in the comment is the Salina Group, which contains beds of halite, more commonly known as "rock" or "common" salt (NaCl-sodium chloride). The Salina Group underlies most of Ohio, but halite beds are restricted to the eastern one-third of the State (Tomastik, 1997). The Salina Group consists of interbedded dolomite (calcium/magnesium carbonates), anhydrite (calcium sulfate), halite (sodium chloride), and shale. In the Mosquito Creek Lake project area, the cumulative thickness of halite ranges from 222 to 271 feet (Tomastik, 1998).

The Draft PA/EA does not specifically mention drilling through the Salina Group. However, Figure 11, page C-24, Appendix C of the Draft PA/EA displays the typical geologic formations encountered in drilling to the Clinton sandstone, including the Salina Group, and Section 4.2.4 Water Resources, page 4-33 of the Draft PA/EA states that the drilling pits would be used to contain "brine, cuttings (including halite, or "rock salt"), and drilling fluids".

Halite cuttings are one of several sources of salinity in pit waste. Pit waste can include cuttings of rock that contains formation water (water in the rock's pore spaces) ranging from fresh to brine (highly saline formation water), free liquids (formation water, rainwater, drilling fluids), halite cuttings, cuttings of non-porous rock, and cementing materials (from cementing of casing in the well

bore).

In general, formation water ranges from fresh in shallow aquifers to brine in deep water-bearing rock formations. In the Mosquito Creek Lake project area, fresh formation water occurs in aquifers such as the Berea and Cussewago sandstones. With increasing depth, formation water becomes increasingly mineralized and brackish and finally transitions to brine. Brackish water, which contains relatively low concentrations of salt, is saltier than fresh water but not as salty as brine. Brine contains a large quantity of dissolved salt, especially sodium chloride. Brine-bearing rock begins at the top of the "Big Lime" (see Figure 11, Page C-24 of the Draft PA/EA), which is at depths of 2,600 to 2,800 feet in the vicinity of Mosquito Creek Lake. All water-bearing rock formations from the top of the Big Lime to the base of a typical Clinton well at 4,200 to 4,300 feet would contain brine.

Typical air rotary operations can generate 1,000 to 1,500 barrels of brine per well (ODNR, 1989). At the chloride concentrations typical of northeastern Ohio brines, one barrel of brine could contain 90 to 104 pounds of soluble salt (ODNR, 1989). Addition of halite cuttings to a drilling pit can significantly increase the quantity of salt in the pit. A 10-inch diameter borehole drilled through the Salina Group could produce 737 pounds of salt per 10-foot section (ODNR, 1989). Fresh to brackish formation water and cuttings from shallower formations help dilute the salinity of brines and cuttings from deeper formations. At the end of drilling operations free liquid in the pit is removed and disposed in Class II disposal wells per State requirements. The remaining cuttings are normally buried in place when the pit is closed.

The Draft PA/EA does not avoid the "containment" issue. Draft PA/EA Sections 4.2.4, Water Resources and 4.2.3, Soils and Prime Farmlands discuss impacts to soil, vegetation, and water quality caused by liquid overflowing or leaking from drilling (reserve) pits. The goal for all drilling pits is to minimize or eliminate the likelihood of pit overflow and pit leachate and subsequent effects of leachate and overflow on soils, vegetation and surface and groundwater quality. The primary concern regarding pits containing saline cuttings is the likelihood of more intense short- and long-term effects of pit leachate or overflow on soils, vegetation and water quality.

The Draft PA/EA develops mitigation measures to minimize or eliminate the likelihood of both pit overflow and pit leachate. Measures address pit design and construction to ensure the adequacy and integrity of the pit liner(s), restricting what wastes may be deposited in pits, management and disposal of pit liquids during and after drilling, and pit closure methods. Mitigation measures required for pits at all sites are discussed in Sections 4.2.4, Water Resources and 4.2.3, Soils and Prime Farmlands, and outlined on Table 4-1 and

Appendix A of the Draft PA/EA. Measures to be considered case-by-case depending on site conditions include the fate of the pit cuttings and liner, segregation and removal of saline cuttings, solidification of cuttings, and use of steel tanks instead of excavated earthen pits.

Currently, the only ODNR Division of Oil and Gas approved methods for pit cuttings disposal are either burial in the drilling pit or removal to a landfill. On a case-by-case basis, the Division of Oil and Gas will consider disposal of cuttings in a pit at another drilling site or in an appropriately designed pit constructed at an oil and gas production site. The ODNR Division of Oil and Gas has recently been involved in studies regarding the effects of land spreading of saline pit wastes and pit waste/soil mixtures. These studies may lead to alternatives to current disposal methods.

Segregation of saline cuttings is usually achieved in the following manner. Rock cuttings created by drilling from the earth's surface to the top of the Big Lime are discharged into one pit. At the top of the Big Lime, the discharge line is re-positioned to a second pit. Rock cuttings created by drilling from the top of the Big Lime to the bottom of the well bore are discharged into the second pit. Closure of the pit containing cuttings from the upper well bore involves encapsulating the pit waste in the pit liner (waste may or may not be solidified), backfilling with stockpiled soils, spreading of topsoil, seeding, fertilizing and mulching. Saline waste from the second pit is solidified and transported to either a landfill or to an appropriately designed pit at another oil and gas well site (per approval of both the landowner at that location, the ODNR Division of Oil and Gas, and, for Federal wells, the BLM). The second pit is then closed in the same way as the first pit.

Two primary reasons for requiring segregation and removal of saline cuttings are:

- a. The land owner does not want saline cuttings buried on his property; and
- b. An extra measure of protection may be warranted for environmentally sensitive situations.

For reason b., BLM would evaluate, case-by-case, a combination of factors including, but not limited to:

- how close the drilling pit is to a water well or water body;
- is the drilling pit in an area identified by USGS as a sensitive aquifer outcrop/recharge area (west side of lake and Walnut Creek area);
- is the pit in an area of thin glacial till over permeable bedrock (other than areas identified by USGS);
- is the pit excavated through permeable sand/gravel layers,
- the distance between the base of the pit and the top of the seasonal

high water table; and/or,
- are there alternative pit closure methods, such as the use of
solidification/stabilization agents.

**BAZETTA TOWNSHIP FIRE DEPARTMENT, CHIEF ROBERT L. LEWIS, ASSISTANT
CHIEF DONALD WALDRON - July 16, 1998**

COMMENT: Comment regarding statement on page 4-73 of Draft PA/EA on emergency response capability. "We can not speak for other fire departments, we feel we must speak out on the above statement so that a false sense of security is not given."

RESPONSE: Please see **RESPONSE** to **COMMENT** letter from Cortland City Fire Department, page 14.

SUMMARY OF COMMENTS MADE AT PUBLIC MEETINGS

BLM held two public meetings in Trumbull County in May 1998 to gather information on the Draft PA/EA. Together, these meetings attracted approximately 70 people, of which 20 gave oral testimony. In general, the comments dealt with the potential impacts of oil and gas leasing on surface and groundwater quality, especially as it relates to drinking water, impacts to fish and wildlife, and economics. Some comments referred to local emergency response capability and public health and safety issues.

Transcripts of the public meetings held in Warren and Cortland, Ohio have been reviewed and substantive comments have been extracted. Those comments and responses follow. The page numbers following the **COMMENT** refer back to the actual transcripts which can be viewed at the local libraries listed in the Introduction.

RESPONSES TO COMMENTS FROM WARREN TRANSCRIPT

COMMENT, page 38: Mr. Vogel - Questioned whether BLM personnel stated that "site specific environmental concerns were up to private surface owners and would not be part of a planning process if no surface occupancy was to be the plan adopted."

RESPONSE: As outlined on pages 1-9 and 1-10 of the Draft PA/EA, BLM does not have the authority to regulate how private surface is managed by the surface owner. However, for wells which produce Federal oil and gas through either a Federal drilling permit or Federal agreement, BLM does have the authority to require measures to avoid or minimize adverse impacts that may result from federally authorized activities. If the surface owner does not agree with these measures, BLM can ultimately deny a drilling permit or deny approval of a Federal agreement. If leasing occurs and wells are proposed, a

site specific environmental analysis incorporating additional mitigation measures, as appropriate, would be done at that time.

COMMENT, page 44: Mr. Vogel - Stated that "you [BLM] are in violation of mandates set by the Corps of Engineers in their management plan that says there is no allowance for an exclusive use of Corps of Engineer resources at that lake. You are setting up exclusive use."

RESPONSE: The Mosquito Creek Lake Lakeshore Management Plan, April 1987, defines "private exclusive use" as "the use of public lands or waters by a private citizen or organization such that any benefit to be derived therefrom is in the predominant interest of that individual or organization." As a result of the "no surface occupancy" restriction imposed by the Corps of Engineers, use of the Federal lands for well sites and other permanent above ground facilities will not be permitted. This is true for both alternatives being considered. Therefore, the private exclusive use criterion does not apply. However, development of the Federal minerals would provide benefits beyond those that may accrue to the drillers/operators themselves. Revenues would be generated and distributed to the Federal treasury, as well as state and local governmental entities.

COMMENT, page 46: Ms. Long - Comment referencing pages 34-35 of Draft PA/EA wherein Tables 3-9 and 3-10 do not include data concerning the City of Cortland. Also, the existence of retail trade in Greene Township is disputed.

RESPONSE: U.S. Census data were selected to describe the affected environment in the three townships of the Mosquito Creek Lake planning area, the County, and the State. Township level social and economic data were used to define the smallest area or local environment. The same socioeconomic indicators for Trumbull County and the State were used for comparison. Comparable data are available for these three levels of political jurisdiction, but not all of the same indicators are available for cities. The U.S. Census data were prepared by the Office of Strategic Research, Ohio Department of Development at the request of BLM.

Retail trade includes small commercial establishments like auto service and repair garages, and lawn and garden stores. Even though large retail establishments like Wal-Mart are not located in Greene Township, these two smaller enterprises are located there.

COMMENT, page 50: Mr. Holloway - States that the monitoring section is very general in its description. "There's no specifics on how often someone will be out there to monitor the situation, who those people will be, where they will be coming from, what their contact phone number is, things of that nature. . .".

RESPONSE: See page 11 for a revised Monitoring section.

COMMENT, pages 50-51: Mr. Holloway - a) Concern that Cortland, Warren and Bazetta Township were not also included in the Spill Prevention, Control and Countermeasure (SPCC) Plan distribution, and b) concern that SPCC Plans should contain contacts/numbers from Cortland, Warren and Bazetta Township.

RESPONSE:

a) BLM did not intend to exclude local government agencies from receiving copies of the SPCC Plans. The Draft PA/EA merely stated the current BLM standard Condition of Approval for how copies of SPCC Plans for oil and gas production facilities at COE reservoir projects are distributed. BLM would forward copies of SPCC Plans to Cortland, Warren, and Bazetta Township as the Plans are received.

b) The Ohio EPA (OEPA) administers the SPCC Plan program and specifies the content of the Plans. In the contingency or "Action Plan" portion of the SPCC Plan, operators usually list, at a minimum, numbers for the U.S. EPA, the OEPA, the U.S. Coast Guard, and the local fire department. At the time SPCC Plans are developed for individual oil and gas production facilities, BLM can strongly encourage operators to include names and phone numbers of contact personnel in Cortland, Warren and Bazetta Township.

COMMENT, page 51: Mr. Holloway - Concern that the bodily injury and property damage liability insurance of \$300,000 seems insufficient.

RESPONSE: As indicated on Table D-2, page D-7 of the Draft PA/EA, the ODNR, Division of Oil and Gas requires a minimum of \$300,000 bodily injury and \$300,000 property damage for a total of \$600,000 liability coverage. Because this is a State requirement, BLM can not require the liability coverage to be increased.

COMMENT, page 51: Mr. Holloway - Concern as to what an "Oil Spill Emergency Response Plan (OSERP)" is and what it requires (referred to on page E-2 of Draft PA/EA, not page 82 as indicated in the transcripts).

RESPONSE: Guidelines for preparation of Spill Prevention, Control and Countermeasure (SPCC) Plans are outlined in Title 40, Code of Federal Regulations, Part 112 (40 CFR 112) - Oil Pollution Prevention. Because diking of flowlines associated with wells and tank batteries is not practical, SPCC guidelines require that oil and gas extraction facility SPCC Plans include a strong "oil spill contingency plan". The term "oil spill contingency plan" (also referred to as an Action Plan) would have been more appropriate than the term "Oil Spill Emergency Response Plan (OSERP)" which was used on page E-2

of the Draft PA/EA. An "oil spill contingency plan" includes the following information:

- 1) Action Center: the location or center that issues direction for the cleanup and containment operations - provides the name, address and phone number of the party responsible for clean-up and containment operations, i.e., the oil and gas operator;
- 2) Communications: names/phone numbers of Federal, State offices, and local fire departments to be notified of a spill;
- 3) Immediate Work Force: names/phone numbers of the operator's personnel immediately available on a 24-hour basis; operator's equipment immediately available on a 24-hour basis; names/phone numbers of personnel and equipment that a sub-contractor can make immediately available on a 24-hour basis;
- 3) Stand-by Work Force: names/phone numbers for additional or stand-by personnel and equipment; and
- 4) Clean-up Materials: availability of materials that may be needed in clean-up operations, including the suppliers and phone numbers.

COMMENT, page 51: Mr. Holloway - Who assures that oil and gas drilling crews receive proper training in receiving, storage, handling, and disposal of hazardous and non-hazardous materials? Does BLM require certification of proper training?

RESPONSE: BLM does not require oil and gas operators to provide proof of training in receiving, storage, handling, and disposal of hazardous and non-hazardous materials. This type of training is required by the Occupational Health and Safety Administration's (OSHA) 1989 Hazard Communication Standard (HAZCOMM) and 1990 Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) programs.

HAZCOMM requires employers to develop a system to keep employees informed of, and trained to handle, chemical hazards in the work place. Under HAZCOMM, all manufacturers and employers must:

- prepare a written hazard communication program;
- prepare a list of all hazardous materials in the workplace;
- label all containers of hazardous materials in the workplace;
- collect and maintain a Material Safety Data Sheet for each hazardous material present in the workplace; and
- provide employee training on specific topics related to hazardous substances.

HAZWOPER requires employers to protect the health of personnel involved in: 1) emergency response or clean-up at hazardous waste sites; 2) emergency response at treatment, storage and disposal facilities; and 3) emergency response to incidents involving hazardous substances. An emergency response

is defined as an uncontrolled release of a hazardous substance that requires action by employees or other responders from outside the immediate release area. An emergency response includes a release that poses a potential safety or health hazard and the release cannot be controlled by employees in the immediate area or by maintenance personnel.

HAZWOPER places several requirements on employers of workers who engage in emergency response activities. The employer must:

- develop a written emergency response plan that addresses emergency planning, personnel roles, evacuation routes, decontamination, and use of emergency equipment;
- train emergency response employees to a level determined by their functions and responsibilities and must provide an annual refresher training;
- appoint a senior emergency response official to identify, coordinate and implement emergency operations and assure that personnel wear proper protective equipment; and
- brief any temporary personnel involved in emergency support on any chemical hazards and proper use of protective equipment.

In addition to HAZCOMM and HAZWOPER requirements, SPCC Plan regulations call for instruction of personnel in operation and maintenance of equipment to prevent discharges of oil and applicable pollution control laws, rules and regulations; designation of a person accountable for oil spill prevention; and spill prevention briefings for operating personnel.

COMMENT, page 52: Mr. Holloway - Some of the VOCs should be monitored in water well testing.

RESPONSE: Please refer to RESPONSE to COMMENT letter from Thomas F. Holloway, page 17.

COMMENT, page 60-61: Mr. Vogel - Concern was raised regarding the use of a 1978 report to identify threatened and endangered species. Question was raised as to whether field surveys were completed for threatened or endangered plant species.

RESPONSE: Please refer to RESPONSE to COMMENT letter from Kathy Machingo, pages 19-20.

BLM did not conduct surveys or document observations. The determination of whether or not the special status species occur, or may occur, was based upon documented site observations provided by ODNR and USFWS. Population surveys are only conducted for nesting and wintering bald eagles within the Wildlife Area. Both ODNR and COE conduct mid winter surveys for bald

eagles on a yearly basis. Bald eagles are also counted during biweekly waterfowl surveys flown by ODNR from the beginning of September into January. ODNR begins monitoring established nest sites one month prior to the start of the nesting season. Active nests are then monitored on a weekly basis throughout the nesting season (Grahl, 1998).

The Wildlife Area provides habitat for the majority of the special status species. The no surface occupancy restriction will protect any habitat or species found in this area. Occurrences of special status plant and animal species also have been documented west of the upper two thirds of the planning area and south of the southern tip of the planning area. The massasauga has been documented on non-federal land located outside of the Wildlife Area. Site specific inspections prior to surface disturbance would verify the presence or absence of special status species or habitat. Mitigation measures would be identified based on site specific analysis. Also, please refer to RESPONSE to COMMENT in letter from ODNR, pages 21-22.

COMMENT, page 66: Mr. Vogel - The recent fish kill was not addressed in the document.

RESPONSE: See RESPONSE to COMMENT from Mr. Vogel (page 69, Warren transcript), below. In addition, the fish kill was not addressed in the Draft PA/EA because BLM had no information on the cause of the fish kill or other details of the incident. At the time the Draft PA/EA was being prepared, it was understood that an investigation was being conducted in an attempt to determine the cause of the kill although no data were available. Communication with a COE fisheries biologist on July 17, 1998 revealed that nothing definitive was identified following the analyses of water and algae samples collected from Mosquito Creek Lake (Hoskins, 1998). In an e-mail message to the Mosquito Creek Lake Project office dated June 4, 1998, Robert Hoskins stated that water samples collected in August 1997 showed elevated levels of one type of blue-green algae (*Schizothrix calcicola*) (17,000 cells per milliliter). Although this level is considered low to normal for Mosquito Creek Lake, levels like this could pose problems at other lakes. This algae produces endotoxins that can kill fish. It should be noted that samples were taken after the fact and concentrations could have been higher during the peak kill, especially since the lake water just turned over due to high winds and cool air temperatures. During lake water turnover, nutrients released into the deep anoxic waters of the lake become available to algae. A super bloom could have occurred, however this is not definitive. If it was an endotoxin problem, Mr. Hoskins questioned why the kill was restricted primarily to one size group of channel catfish.

COMMENT, page 69: Mr. Vogel - "... relative certainty that increased turbidity of

the water will spawn oxygen-depleting algae that could cause additional fish kills. And now, is it my mistake, or is it that the blue book [Draft PA/EA] glances over that possibility? Certainly, you've chosen a formula that has diminished the erosion impact from the Youngstown State report that you folks held as the sacred grail last fall and last winter."

RESPONSE: Mitigation measures developed during the analysis process would lessen the amount of erosion and subsequent sedimentation. The measures were specifically developed to prohibit sediments from traveling off the construction sites. Specialists at the National Soil Erosion Laboratory, Purdue University, and at the Natural Resource Conservation Service (formerly Soil Conservation Service), Columbus, Ohio agreed that given the implementation of the erosion control measures specified in the Draft PA/EA, actual soil loss from the well sites would be minimal. The Revised Universal Soil Loss Equation (RUSLE) was selected as a more accurate model for quantifying possible erosion, and not to obtain estimates that would represent lower figures than those calculated by the Youngstown State University (YSU) group. The original USLE was developed for use by the agricultural industry. The revised version has been adapted for application to construction sites. The application of the RUSLE in the Draft PA/EA was accomplished with the assistance of Dr. George Foster, Agricultural Research Service, College Station, Texas, who is the originator of the revised equation.

COMMENT, page 71: Mr. Vogel - "... the council governments and the committee opposed was never included in the data gathering process."

RESPONSE: BLM solicited pertinent data during virtually every phase of this process. From May of 1996 through May of 1998, BLM sponsored and/or attended 13 public meetings/field trips in the local area. Two of the initial meetings were sponsored by the Trumbull County Council of Governments. One of the purposes of these meetings was to identify available data which could be incorporated into the environmental analysis process. Representatives of local governments, as well as the Coalition Opposing the Gas and Oil Drilling, attended all of these meetings. At the time preliminary alternatives were being developed, local governmental representatives were invited and did attend a working meeting of the planning team. Specific details of meetings can be found in Chapter Five of the Draft PA/EA.

COMMENT, page 72-74: Mr. Vogel - Was applicable data from the U.S. Geological Survey (USGS) studies used in the Draft PA/EA?

RESPONSE: The USGS study done for the City of Cortland examined the hydrogeologic framework of the bedrock aquifers in the area (USGS, 1997). The results of the USGS Cortland hydrogeologic study, as well as other studies

which have been performed in the region, were included, as appropriate, in the Draft PA/EA. Specifically, information provided in the Cortland study was used to determine the gross mean water volume and acreage for Mosquito Creek Lake. This information, in combination with computer generated acreage of the lake south of Walnut Creek inlet, was used in volumetric calculations to characterize impacts associated with a potential spill from a brine truck into Walnut Creek. In addition, information from the Cortland study was used to determine the flushing rate for Mosquito Creek Lake. Because the USGS Warren study was not completed by the time the Draft PA/EA was released, its results were not included. However, the results of the Warren study have been incorporated into this Proposed PA/EA (see page 3).

COMMENT, pages 78-80: Mr. Vogel - Concern was raised over response capability of Weathersfield Township (travel distance and level of response); requests more detail on HazMat teams; mitigation plan is very general; requests priority response capabilities of resources cited; states that every HazMat unit cited has stated that they can't respond in a timely fashion.

RESPONSE: None of the HazMat teams commented to BLM about an inability to respond in a timely fashion. For additional information related to this comment, please see **RESPONSE to COMMENT** letter from the Cortland City Fire Department, page 14 and **RESPONSE to COMMENT** from Mr. Vogel (page 58, Cortland transcript), page 50. County, State, regional and national contingency plans discussed in BLM's response to the Cortland City Fire Department address spill/emergency response priorities.

COMMENT, page 83: Mr. Vogel - Lakeview Local School District (LLSD) had no business "being included in any portion or authorship or support for the document because they had no mineral rights or interest in the document or in the leasing process."

RESPONSE: The LLSD owns 100% of the surface estate while the Federal government (not the COE) owns 100% of the mineral estate in the 32.46 acre tract proposed for leasing. The LLSD has an interest in the tract as a surface owner who could be directly impacted by oil and gas operations resulting from leasing of the Federal oil and gas in the tract. BLM Milwaukee Field Office policy is to contact surface owners to notify them of proposed leasing of the Federal mineral estate, to request information about surface resources and uses, and to determine the surface owner's issues and concerns regarding potential oil and gas operations on the land. Mr. Raidel, acting on behalf of the LLSD, provided BLM surface use and resource information and reasons why the LLSD believed the surface was inappropriate for occupancy by oil and gas operations. The LLSD did not author any portion of the Draft PA/EA. Mr. Raidel and the LLSD no more supported the BLM document than did any other

Federal or State resource agency that provided information for the analysis.

COMMENT, page 85: Mr. Roger Hernon - Requested a statistical risk assessment related to the risk associated with drilling a range of zero to 41 wells.

RESPONSE: The Draft PA/EA does include statistical analyses relating to risk. Historical data relating to numbers of oil/brine spills, fires/explosions, pipeline failures, well blowouts, and tanker truck accidents was used to predict the risk associated with additional development. It should be noted that any development that may occur at Mosquito Creek Lake as a result of this proposal would be subject to more stringent protective measures than those in place for existing wells in the area. The maximum number of wells proposed to be drilled, if leasing occurs, is 41. The total number of existing wells in Trumbull County is approximately 2,400. The level of risk analysis documented in the Draft PA/EA is deemed sufficient and a multi-variable computer generated risk analysis is not warranted.

RESPONSES TO COMMENTS FROM CORTLAND TRANSCRIPT

COMMENT, page 28: Ms. Long, Cortland City Council Member -

- 1) "On page 3-4 of the blue book [Draft PA/EA], the draft has no reference to the runoff from an industrial site in Cortland on the east shore of the lake".
- 2) A letter from Cortland City Fire Chief, Bill Novakovich raised a concern regarding the response capability of the Cortland fire department in the event of a spill.

RESPONSE: 1) The location of this industrial site has been included in this document on page 8. It is recognized that a variety of pollutants impact Mosquito Creek Lake every day. Increasingly, water pollution problems are associated with nonpoint sources such as construction sites, farmland, landfills, roads/highways, and sewage systems. Unlike point sources of pollution, discharges from nonpoint sources are not regulated and they are not treated. The concentration of pollutants in urban runoff varies with the amount of material deposited, amount of impervious surface, vegetative cover, time between rainfall events, and the duration and intensity of rainfall. The Ohio Nonpoint Source Management Program (1989) identifies constituents/primary sources of highway runoff. Similar contaminants could be expected from large paved parking lots. Typical contaminants include particulates, nitrogen, phosphorus, metals (e.g. lead, zinc, iron, copper, cadmium, etc.), bromide, cyanide, sodium, calcium, chloride, petroleum, polychlorinated biphenyls, rubber and sediment. Sources include, but are not limited to, auto exhaust, tire wear, lubricating oil and grease, motor oil, rust, moving engine parts, fuels, deicing salts, antifreeze, soil, bird droppings, litter, and erosion. The opening of this industrial site poses one additional source of contamination for Mosquito Creek Lake.

2) See RESPONSE to COMMENT letter from the Cortland City Fire Department, page 14 and RESPONSE to COMMENT from Mr. Vogel, (page 58, Cortland transcript), page 50.

COMMENT, page 29: Ms. Long, Cortland City Council Member - Comment stating that in 1996, Portage County received \$23,500 from Federal leases.

RESPONSE: According to information supplied by the Ohio Department of Natural Resources, Office of Budget and Finance, mineral leasing receipts paid to Portage County in 1996 amounted to \$104,710.39. This information is reproduced in the document entitled, "Overview Draft for Proposed Mosquito Creek Reservoir Leasing/Drilling Project", prepared by Trish Nuskiewicz, Trumbull County Planning Commission, in July, 1997.

COMMENT, page 32: Ms. Mack - "Has anybody made an assessment of how many wells have been plugged, how long they have been depleted of gas or oil? Because I have 50 acres and we have a well that's been depleted and hasn't produced for three years. You can't get the oil companies to plug the wells."

RESPONSE: No documented assessment has been made regarding how many wells have been plugged or how long they have been depleted of gas or oil. Page 4-74 of the Draft PA/EA addresses what steps would occur if an operator refuses to properly plug and abandon a well. Also, please refer to RESPONSES to COMMENTS #6 and #13b in the letter from the U.S. Army Corps of Engineers, pages 25 and 31, respectively.

COMMENT, page 34: Mr. Glancy - Comment stating that the Draft PA/EA does not establish how revenues from Federal wells will be distributed to Bazetta Township from the county or the State.

RESPONSE: United States Code, Title 33, Navigation - Navigable Waters, Paragraph 701c-3 entitled, "Lease receipts; payment of portion to States", states that "75 per centum of all moneys received and deposited in the Treasury of the United States during any fiscal year on account of the leasing of lands acquired by the United States for flood control, navigation, and allied purposes, including the development of hydroelectric power, shall be paid at the end of such year by the Secretary of the Treasury to the State in which such property is situated, to be expended as the State legislature may prescribe for the benefit of public schools and public roads of the county, or counties in which the property is situated . . . the term "money" includes . . . such bonuses, royalties, and rentals . . . paid to the United States from a mineral lease issued under the authority of the Mineral Leasing Act for Acquired Lands."

Federal oil and gas operators pay bonuses, royalties, and rentals to U.S.

Department of the Interior's Minerals Management Service (MMS). MMS distributes 75% of the oil and gas revenues to each State's Treasurer. In the case of Ohio, the DNR, Office of Budget and Finance, sends each County Treasurer a single check combining revenues from Federal oil and gas leases (mineral leasing receipts), flood receipts from the Army Corps of Engineers' reservoir projects, and forest receipts from the U.S. Forest Service. The County Treasurer/Auditor's office distributes the revenues to the townships in the manner each County has established. Ad valorem or property taxes on oil and gas production are also assessed by County governments and the receipts distributed to multiple local political subdivisions including townships. The Federal government has no control over distribution of revenues at the local level, i.e. beyond distribution to the County.

COMMENT, page 35: Mr. Piros - Concern was raised related to potential road damage and adequacy of the existing road bonds.

RESPONSE: Road use restrictions and bonding related to overweight/oversize vehicles are imposed at the local and State levels and are designed to minimize damage to roads. If proper restrictions are not implemented, road damage could occur. BLM has no authority to impose additional restrictions related to road use. Road bonds are administered by the permitting entities. Also, please refer to RESPONSE to COMMENT from Mr. Vogel (page 59, Cortland transcript), page 52.

COMMENT, page 37: Ms. Machingo - There are statistics about noise pollution in the Draft PA/EA from 1979.

RESPONSE: The statistics referred to appear to be the noise level measurements for construction, pipeline installation and traffic provided in Table 4.7 on pages 4-51 and 52 of the Draft PA/EA. These noise level measurements came from "Noise In The Human Environment" edited by H.W. Jones. These were scientific measurements of noise levels which are as valid today as in 1979.

COMMENT, page 39: Miss Busko - Concern was raised over the "... hundreds of acres that you are probably going to destroy through the drilling process ...".

RESPONSE: Total projected acres disturbed under Alternatives A and B would be 62 and 77 acres, respectively. Following reclamation, acreage not revegetated would total 7 and 12 acres. This acreage would be stabilized and in use during the production phase (access road, wellhead, wellhead turn-around area, and tank battery).

COMMENT, page 42: Ms. Stafford - What is the term of employment estimates

provided in Tables 4-10 and 4-11 (pages 4-63 and 4-64) of the Draft PA/EA? What types of employment do the estimates represent?

RESPONSE: Increases in employment levels shown in Tables 4-10 and 4-11 of the Draft PA/EA represent the overall increase in employment for the State with no regard to timing. The employment figures depict the total impact on the number of jobs, Statewide, over the term of the proposal, given either alternative. Length of employment associated with any of the jobs that may be generated is impossible to determine through the RIMS II economic model used in this study.

Immediate employment is expected for construction, drilling and well service workers. Secondary industries such as stores and restaurants may require additional employment during well site and pipeline construction. Access road maintenance workers and well tenders will be employed for as long as the wells are in production. An increase in employment may also occur in the manufacturing sector if additional oil and gas and/or construction equipment is needed.

COMMENT, page 43: Mr. Vogel - Comment refers to a previous briefing report that states "... it is the policy of the Department of the Army that all lands under its control will be made available for oil and gas leasing, except that installations or civil works projects specifically excluded from such leasing." Statement in transcript claims that the Corps of Engineers has failed in their moral and legal obligation set forth in their mission statement to protect resources at Mosquito Creek Lake.

RESPONSE: Department of the Army oil and gas leasing policy states that "in accordance with Department of Defense policy to promote the optimal use of its lands under the multiple-use principle, it is the policy of the Department of the Army that all lands under its control will be made available for oil and gas leasing, except at installations or civil works projects specifically excluded from such leasing upon the recommendation of the Chief of Staff or Chief of Engineers, respectively, and approval by the Secretary of the Army." Mosquito Creek Lake, as a civil works project, has not been specifically excluded from leasing.

COMMENT, page 44: Mr. Vogel - "There has been no recent accurate census data or research done regarding Corps of Engineers identified threatened and endangered species of both plant and animal life in target areas."

RESPONSE: Refer to RESPONSE to COMMENT from Mr. Vogel, (page 60-61, Warren transcript), page 41.

COMMENT, page 49: Mr. Vogel - Concern raised over possible exceptions that may

be granted for surface disturbance on Corps of Engineers' property related to access roads, pipelines, and "things of that nature". The comment states that there will be "encroachments on Corps of Engineers' property through this drilling process."

RESPONSE: The only exception to the "no surface occupancy" stipulation identified in the Draft PA/EA was for buried pipelines. The Corps of Engineers has indicated that they would consider approving buried pipelines crossing the Mosquito Creek Lake project area on a case-by-case basis. Prior to granting approval for buried pipelines, the Corps of Engineers would evaluate site-specific impacts and identify measures necessary to protect surface resource values.

COMMENT, pages 51-52: Mr. Vogel - Bazetta Township response capability with regard to oil spills on Mosquito Creek Lake is not adequate; BLM doesn't discuss what is required for prudent mitigation measures.

RESPONSE: See **RESPONSE** to **COMMENT** letter from the Cortland City Fire Department, page 14 regarding oil spill response. The oil and gas operator responsible for a spill into Mosquito Creek Lake would also be responsible for providing booms, if needed. If the oil and gas operator could or would not do so, the OEPA would activate a contractor(s) who had such equipment and experience at deploying it.

COMMENT, page 53: Mr. Vogel - BLM doesn't address potential vandalism situations such as the site at Berlin Lake that had a "42-gallon barrel of crude oil with plywood lid".

RESPONSE: Vandalism at oil and gas sites is addressed on page 4-69 of the Draft PA/EA. Existing constraints and mitigation measures related to vandalism are listed in Table 4.1, page 4-18 and special mitigation measures related to vandalism are listed in Appendix A, pages A-16 to A-18 of the Draft PA/EA. Measures that would minimize the threat of vandalism include locked gates or cable on access roads and fences with locked gates around both wellhead and production facilities.

At the oil and gas site referred to in the comment, the oil and brine storage tanks are secured inside a fence with a locked gate. While the oil tank salesline extends beyond the tank battery fence and dike, the control valves for the salesline are at each tank inside the secured area and are not accessible to the general public. The "barrel" referred to in the comment serves as a containment vessel for any oil drips resulting from the oil purchaser connecting and disconnecting a hose at the end of the salesline during an oil pick-up. This arrangement is preferable to allowing the oil to drip on the ground. This arrangement, which has been in place for about six years, has not resulted in an

oil spill or public health hazard.

COMMENT, page 53: Mr. Vogel - A comment was made stating the BLM did not "take into account Delphi Packard's reopening of the plant in Cortland . . . You figure 500 cars a shift coming in there. You [BLM] don't account for that in this report. A vacant piece of land, concrete, is different from a piece of land that will have cars carrying road salt, cars starting up, and what they do to that fragile environment . . ."

RESPONSE: See RESPONSE to COMMENT from Ms. Long (page 28, Cortland transcript), page 45.

COMMENT, page 55: Mr. Vogel - The PA/EA did not mention the Halliburton "spill".

RESPONSE: The only information BLM has available in regard to the Halliburton "spill" is from the COE's "Report on Utilization of Civil Works Lands and Facilities" (dated October 5, 1995) for Mosquito Creek Lake. This report indicates that Halliburton had a permit from the Ohio Environmental Protection Agency (OEPA) that allowed cleaning of holding tanks which discharged petroleum-based products into a drainage ditch that went under a road and into the lake (this was presumably a National Pollutant Discharge Elimination System (NPDES) permit for a point source discharge to a navigable water). Heavy rainfall would cause the holding tanks to overflow. This resulted in reported oil slicks on the lake, killing of grass and other vegetation, dead earthworms and other environmental degradation. In 1995, COE Project personnel and ODNR Divisions of Parks and Recreation and Wildlife were attempting to resolve the problem with the OEPA. This Halliburton facility has since closed.

COMMENT, page 58: Mr. Vogel - "Every local government and every authority that we have . . . have told you, have told us and the government, that there is no way Trumbull County has the resources available to handle your project."

RESPONSE: BLM did not receive comments from local government officials indicating that Trumbull County lacks the resources to "handle this project". BLM did not receive any comment from the City of Warren. BLM did not receive any comment from the Trumbull County Emergency Management Agency (TCEMA)/Local Emergency Planning Committee (LEPC). BLM did receive letters from City of Cortland Fire Department (May 8, 1998) and Bazetta Township Fire Department (July 10, 1998) clarifying the limitations of local emergency response groups and expressing concern that statements made on page 4-73 of the Draft PA/EA under "Impact To Local Emergency Response Capability" give a false sense of security about local response capabilities (see Appendix B, Public Comment Letters, pages 69 and 89).

The Cortland Fire Department indicated that they have responded to and handled oil and gas well site incidents in the past. However, the Department lacks the equipment and expertise needed to respond to a spill into Mosquito Creek Lake.

Bazetta Township Fire Department stated that while they have responded to and handled gas and oil well emergencies in the past, the Township Department has used the Trumbull County HazMat Team to assist them, as the Department is not equipped to handle a large spill. According to the Department, all of Bazetta's vehicles have spill kits on board that can handle a spill until the HazMat team arrives and the whole Bazetta Department is trained and certified to the operations level with a few members trained to the technician level. The Department indicated that the County HazMat Team, the Mineral Ridge Fire Department and Warren City Fire Department have vehicles set up for response with a limited amount of sorbents on their vehicles. Hubbard Fire Department has trained personnel to respond to emergencies with very limited equipment as they do not have a vehicle just for that purpose. When dealing with a spill in Bazetta Township, the Trumbull County HazMat team would be requested to respond. The Trumbull County HazMat team has mutual aid agreements with other teams that can assist them if needed. Spill response is addressed in the RESPONSE to COMMENT letter from the Cortland City Fire Department, page 14.

In a March 7, 1997 letter to Melissa Long, the Trumbull County Emergency Management Agency (TCEMA) indicated that the Trumbull County Emergency Operations Plans address oil and gas well emergencies in a general sense. The letter further stated that a free standing oil and gas well emergency plan is necessary in light of the large number of existing wells in the county and the prospect of continued oil and gas activity in the county. In April 1998 the TCEMA completed Annex P (Gas and Oil Wells Emergency Response Plan) to the County Emergency Operations Plan. The TCEMA intends to run an emergency preparedness exercise for an oil and gas incident sometime in the fall of 1998 (Bartlomain, 1998). There has been no indication from the TCEMA that a lack of an oil and gas-specific emergency plan has jeopardized the ability of the local emergency response community to do its job.

Oil and gas drilling and production operations have been ongoing in the county for many years. In the past 7 years an average of 2,400 wells have operated in the county. As shown in the Draft PA/EA analysis, emergency incidents related to these operations have been rare. There has been no indication from the local fire departments, HazMat teams or the TCEMA/LEPC that the emergency response community has been unable to handle emergency incidents related to this number of wells in the past. An additional 14 to 41 wells that could result from Alternative A and B as described in the Draft PA/EA

represent an increase of only 0.6% to 1.7% over the existing number of wells in the county.

COMMENT, page 59: Mr. Vogel - "You [BLM] didn't include local agencies and direct input into production of this document. You were exclusionary."

RESPONSE: See RESPONSE to COMMENT from Mr. Vogel (page 71, Warren transcript) page 43.

COMMENT, page 59: Mr. Vogel - "You can't dispute weights of trucks. You failed — you say one percent increase in traffic . . . Five hundred trucks, 580 trucks a year leaving those well sites, with up to 10,000 gallons of waste product in each truck, the weight of those vehicles running over Bazetta roads. You don't account for that."

RESPONSE: Page B-10 of the Draft PA/EA identifies the projected number of one-way trips during the production phase of both Class A and Class B/C vehicles. The maximum number of one-way trips would occur under Alternative B. It is projected that up to 364 one-way trips for Class B/C per year would be anticipated (291 brine trucks and 73 oil trucks). These projections assume development of all 41 wells. At a maximum, this represents one additional one-way trip per day. Size of oil trucks vary. A small oil truck (80 barrels or 3,360 gallons) would weigh approximately 50,000 pounds loaded. An oil tanker truck (150 barrels or 6,300 gallons) would weigh approximately 70,000 pounds loaded. Brine trucks are typically 80 barrel trucks (3,360 gallons). Loaded brine trucks weigh approximately 60,000 pounds. Any vehicle weighing in excess of 80,000 pounds would be required to obtain an overweight vehicle use permit from the State or county and file appropriate bonds. As stated on page 4-59 of the Draft PA/EA, the drilling rig is the only piece of equipment that would need a special overweight hauling permit. Townships may impose more stringent restrictions on road use with regard to weight limitations, as necessary. Roads with more stringent restrictions are posted appropriately. Existing controls imposed at the State, county and township level are designed to minimize damage to local roads.

COMMENT, pages 62-63: Ms. Long - No freestanding oil and gas well contingency plan has been implemented or tested.

RESPONSE: The Trumbull County Emergency Management Agency (TCEMA) completed an oil and gas-specific annex to the County Emergency Operations Plans in the spring of 1998. The TCEMA has preliminary plans to run an emergency preparedness exercise for an oil and gas incident sometime in the fall of 1998. There has been no indication from the TCEMA that lack of an oil and gas-specific emergency plan has jeopardized the ability of the local emergency response community to do its job. Oil and gas drilling and

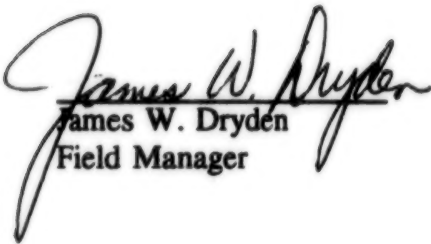
production operations have been ongoing in the county for many years. There are roughly 2,400 producing oil and gas wells in the county. As shown in the Draft PA/EA, emergency incidents related to these wells have been rare, and there would be minimal likelihood that emergency incidents would increase due to drilling and production of an additional 14 to 41 wells.

FINDING OF NO SIGNIFICANT IMPACT

REVIEW

Based on the analysis of the potential environmental impacts contained the Mosquito Creek Lake Draft Planning Analysis/Environmental Assessment (PA/EA) and additional information provided in the Proposed PA/EA, I have determined that impacts will not be significant. This decision will not affect any significant national resources; nor will the cumulative impacts of this proposal, in combination with other past, present or reasonably foreseeable future actions, result in significant impacts. Therefore, I have concluded that an environmental impact statement is not required.

I have reviewed the environmental assessment and find it technically adequate and consideration has been given to all resource values.


James W. Dryden
Field Manager

9/28/98
Date

APPENDIX A
SPECIAL MITIGATION MEASURES

SPECIAL MITIGATION MEASURES IDENTIFIED THROUGH ANALYSIS

The following section reproduces the special mitigation measures outlined in Appendix A of the Draft PA/EA. Additional mitigation measures identified in the Proposed PA/EA have been incorporated into this section (see pages 7, 62, and 63).

MEASURES THAT ADDRESS ALL ISSUES:

- The operator must notify BLM at least 3 days before beginning approved operations under a permit. This includes surface disturbance on private surface that is associated with approved Federal drilling permits and/or agreements.
- The operator must notify BLM at least 24 hours before spudding a well to allow BLM the opportunity to witness critical well operations.

MEASURES THAT ADDRESS PRIMARILY WATER QUALITY AND PUBLIC HEALTH/SAFETY ISSUES:

- Operators must use best management practices during construction activities. This would require the use of sediment barriers, mulch and stockpile covers at construction sites; grading, planting and mulching immediately after any construction is completed.
- Operators must file copy of Spill Prevention, Control and Countermeasure (SPCC) plans with BLM and COE Mosquito Creek Lake Project Manager.
- Only drilling muds, drilling additives, drilling fluids, cuttings, cementing materials, native soils, and/or approved pit solidifying materials would be permitted to be placed in the reserve pit.
- Reserve/working pit fluids must be removed by a State approved hauler and disposed of in a State approved facility as needed to maintain at least a two foot freeboard (i.e. the space between the top of the fluids and the top of the pit dike).
- Muds and cuttings must be encapsulated above the annual high water table level, or disposed by another method approved by the BLM, ODNR, and/or private surface owner.
- The rat and/or mouse hole must be liquid-tight and constructed of steel pipe with a welded basal plate or bull plug. The annulus should be sealed with bentonite to prevent backside loss of brine or drilling fluids.

- The cellar shall be lined in a manner that collects and channels all fluids that accumulate beneath the rig substructure to the reserve pit.
- A continuous spill prevention apron should extend from the cellar, beneath the discharge line, to the reserve pit. The lined trough should have sufficient slope to enable all overflow from the cellar to drain into the reserve pit.
- Reserve pits should be excavated in native ground. If this is not possible, at least 50% of the reserve pit should be constructed below original ground level to prevent failure of the pit dike.
- The bottom and sides of all pits shall be graded and free of objects which could perforate the liner. If it is impractical to remove all objects which could puncture a liner, the base of the pit should be padded with straw, sand, clay, geotextile fabric, or other material capable of preventing damage to the liner. Side walls should be covered with a cellotex, or other similar material, to preserve liner integrity.
- If the location has sufficient size, pit side slopes should be at least twenty degrees out of vertical to prevent slumping of side walls.
- All reserve/working pits should be lined with a single piece liner that meets or exceeds the following standards:

	Tensile Strength/Elongation	
Non-reinforced Liners	ASTM D 882-83	1550 PSI, 300%
Reinforced Liners	ASTM D 882-83	1500 PSI, 10%
Puncture Resistance	ASTM 2582-67	40 lbs. force
Hydrostatic Resistance	ASTM D 751-A-31 or FTMS 191-5512	50 lbs.
Seam Strength	Meet or exceed parent material properties for factory seams and 80% for field seams for the aforementioned standards.	

- If permeable sand and/or gravel deposits or fractured bedrock is encountered during excavation of the drilling pit, the owner shall spray apply a bentonite slurry to the pit base and sidewalls prior to emplacing the synthetic liner.
- The liner apron shall be secured around the berm in a manner which would prevent slumping of the liner below fluid level prior to pit closure.
- The liner shall be installed with sufficient slack to prevent tearing of the liner

when the pit is filled with cuttings and fluid.

- All discharge into the pit from drilling and completion operations must be performed in a manner that would prevent damage to the pit liner.
- If the liner is damaged, at no time should fluid be allowed to rise above a tear which would allow the escape of brine or oilfield waste.
- No hazardous substances as defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) shall be used in the circulating medium when drilling through uncased zones containing potable water.
- Surface casing must be set at least 50 feet below the base of the underground source of drinking water and cemented back to surface either during the primary cement job or during remedial cementing.
- Tank batteries would be secured by fencing and locks to minimize the impact related to oil spills caused by vandalism.
- BLM would require the installation of pressure switches on all wells.
- Crude oil storage tanks shall be equipped with a pressure-vacuum thief hatch, vent-line valve, and plugs on other vent ports of the tank.
- Tank batteries be surrounded by an impervious dike capable of containing 200% of the total volume of the storage tanks in the battery.
- Only cuttings, drilling fluids, native soils, cementing materials and/or approved pit solidification materials may be placed in reserve pit(s). Non exempt, exploration and completion wastes, as defined by U.S. Environmental Protection Agency's regulatory determination (53 FR 25453-25454) should be segregated from exempt wastes. All non-exempt wastes shall be disposed in accordance with Ohio Environmental Protection Agency (OEPA) regulations and guidelines.
- No annular waste disposal is allowed.
- The operator will contain all fracturing fluids in steel tanks and haul them to an approved disposal site.
- Based on COE policy, BLM would not approve operations that involve installation of permanent above ground structures at or below the full-pool elevation of 904.0 feet. These structures include, but are not necessarily

limited to, wellhead and associated artificial lift equipment, tank batteries (oil and brine storage tanks, separators, meters) and gas compressors.

Site specific requirements relating to the following measures would be developed on a case-by-case basis (addresses water quality and public health/safety issues):

- Specific water well monitoring requirements would be developed at the time a well site is proposed. BLM would evaluate site specific information relative to fresh water aquifers in the area of a proposed oil and gas well, considering the relative depth of the aquifer, well construction specifications of adjacent water wells, and topography as it relates to the proposed site. Based on these criteria, BLM would select four wells to be sampled and tested. Samples shall be collected in approved containers and tested in laboratories using OEPA test methods, including appropriate quality assurance/quality control, and parameters would have errors not to exceed percentages defined by method and concentration. The tests would include, but not be limited to, testing for the presence of: carbonates and bicarbonates (mg/l); filtered sample for water soluble barium (filtered unpreserved sample) ($\mu\text{g/l}$); calcium (mg/l); chloride (mg/l); magnesium (mg/l); potassium (mg/l); sodium (mg/l); sulfate (mg/l); and residue as total filterable residue (mg/l). Test results shall be filed with the BLM and ODNR, Groundwater Protection Section, and the township Zoning Inspector, if applicable.
- Reserve/working pits shall not be excavated into the water table. Steel tanks must be used in lieu of pits if high water table renders construction of adequate size drilling pits impractical. If steel tanks are used, they must be underlain by a plastic apron to capture any fluids that are not contained by the tank.
- If well pads and access roads are proposed to be partially located in floodplains and no alternative sites are available, the following would be considered:
 - a. put the well pad on a level area to avoid the use of fill;
 - b. grade the well pad to direct surface runoff and accidental spills away from the floodplain area;
 - c. shut-in the well during flooding of the well pad or access road;
 - d. and/or install remote shut-off devices for the well.
- Examples of sediment barriers that may be employed to control soil erosion and sedimentation at a particular well site include: the construction of an earthen berm (using the subsoil from the reserve pit excavation) around the perimeter of the well pad; or the construction of a shallow ditch around the well pad to collect runoff; or trapping sediment by placing filter fencing and/or hay bales around the well pad. One other site specific protective measure would include identification of the appropriate amount of vegetation to be removed from the site.

- Standard Army Mineral Lease Stipulation # 21 requires a 100 foot setback from intermittent streams and a 200 foot setback from perennial streams. This stipulation would apply to those streams that cross or are adjacent to Federal property. The need for additional setbacks between surface disturbance, oil and gas facilities and water bodies would be determined on a case-by-case.
- BLM could require segregation of all saline cuttings from reserve pits if warranted by site conditions.
- The fate of the pit cuttings and liner would remain a negotiable item to be addressed at the time specific proposals are received so that factors such as soil type, drainage patterns, distance to water wells, depth of water table, and alternate methods of pit closure and rehabilitation may be evaluated. Typical operations include encapsulation of the drill cuttings in the pit liner. Pit solidification would be considered on a case-by-case basis.

MEASURES THAT ADDRESS SPECIAL STATUS SPECIES:

Site specific requirements relating to the following measures would be developed on a case-by-case basis:

- Proposed well location and associated facilities would not be approved if within one-half mile of an active bald eagle nest.
- No surface occupancy would be permitted on or within one-half mile of an established bald eagle nesting territory.
- Within potential Indiana bat habitat, suitable maternity roost trees (cavities and/or exfoliating bark) would not be cut down if it is possible to avoid doing so. If such trees must be removed, they cannot be cut down between the period of April 15 through September 15. If potential roost trees are present and the time restriction is unacceptable, mist net surveys, or other surveys, should be conducted to determine if bats are present. If the survey determines that Indiana bats do not inhabit the area, the identified trees may be cut down during any time of year.
- If Gray birch is found on proposed development sites the lessee/operator would be required to avoid removal of the trees.
- If hobblebush is found on proposed development sites the lessee/operator would be required to avoid removal of hobblebush.
- Disturbances in massasauga habitat will be avoided or seasonal restrictions will

be applied. Site inspections will be made to determine the potential for the presence of the massasauga or its habitat. If indicated, a survey would be required to document that the massasauga does not inhabit the area. If it is determined that the massasauga is present or potential habitat exists, surface disturbance will not be permitted from mid April through the end of October. Surface disturbance would also not be permitted if a site is identified as massasauga winter habitat.

MEASURES THAT ADDRESS AESTHETICS, INCLUDING AIR QUALITY, AND NOISE. INDIRECTLY, THEY WOULD ALSO ADDRESS CONCERNS RELATING TO TRAFFIC/SAFETY CONCERNS:

- BLM would not allow any well located adjacent to COE or ODNR developed recreation areas to be drilled, plugged back, or deepened during the time period beginning on Friday of the Memorial Day holiday week end through Monday of the Labor Day holiday week end.
- BLM would not allow well servicing operations or workover procedures to be conducted on any producing well between 10 p.m. and sunrise from Memorial Day to Labor Day.
- BLM would not allow any producing well located adjacent to COE or ODNR developed recreation areas to emit noise which, when measured at the nearest developed recreation area, exceeds 45 dB(A).
- Thief hatch covers on oil storage tanks would be kept in a locked down, latched position.
- No open burning of garbage or refuse is permitted at drill sites or other oil and gas facilities.
- With surface owner consent, all access roads must be properly graded and surfaced with gravel or paving material to prevent mud from getting to State, county, and township roads and to minimize dust from forming during the use of the access road.

Site specific requirements relating to the following measures would be developed on a case-by-case basis (addresses aesthetics, including air quality, and noise):

- Tank battery facilities would be evaluated on a case-by-case basis. If necessary, vent stacks on oil storage tanks would be fitted with activated charcoal filters. Such filters shall be cleaned or replaced as needed to adequately suppress odor.

- Proposed operations would be evaluated on a site specific basis to determine if dust suppression measures are necessary during construction to reduce or eliminate the impacts of fugitive dust on air quality. Dust suppression measures would be determined on a case-by-case basis (examples of measures - application of water, dust-suppressing chemicals, graveling of soils susceptible to wind erosion, etc.).
- The COE Standard Army Mineral Lease Stipulation # 14 requires a 200 foot setback from developed recreation areas. Additional distance setbacks between oil and gas operations and noise sensitive areas could be developed in site specific analyses.
- BLM may require special noise reduction measures for well drilling, completion and production operations proposed adjacent to noise sensitive areas including, but not limited to, residences or residential allotments, the Bazetta Township Park, the Lakeview Local School District property, the COE operations area or hiking trails on COE or State lands. BLM would conduct a site specific analysis to determine what noise reduction measures may be required. Noise impacts may be reduced by one or more of the following technological/engineering design features:
 - Require mufflers on engines on the drill rig (hospital or residential grade), natural gas run pump jack, and gas compressor;
 - Require orientation of exhaust pipes for engines on drill rig, pump jack, gas compressor away from noise recipients;
 - Require blooie line discharge pointed away from noise recipient;
 - Require electric motor vs. natural gas run engine on pump jack;
 - Require natural or artificial noise barriers during drilling, well testing, fracturing, and/or production (e.g. hang tarps between noise generator and noise recipient during drilling, bank up earth removed from reserve/working pits between noise generator and recipient);
 - Require use of vegetative screens to muffle sound between noise generator and recipient;
 - Require sound minimizing housing around gas compressors; and
 - Require compressor housing doors to be oriented away from noise recipient.
- Measures would be identified to reduce impacts to recreational and visual resources and include: requiring a distance buffer from residences and private or public recreational facilities; using vegetative buffers to screen the wellhead and production facilities; painting all production facilities to harmonize with natural surroundings; and appropriate noise and odor abatement. Well site locations may be restricted by the presence of recreational areas.

MEASURES THAT ADDRESS PUBLIC HEALTH AND SAFETY:

- A sign displaying the operator's name, well name, State permit number and 24 hour emergency number would be placed at both the wellhead and tank battery.
- The tank battery shall be placed on a minimum 5 inch bed of limestone and/or natural stone.
- The tank battery site, fence and surface equipment shall be made of non-corrosive material or painted with weather proof paint. These components shall be maintained throughout the life of the well.
- All wellhead, tank batteries and related production equipment shall be enclosed with a six foot high chain link fence with a locked gate, three strands of barbed wire at the top with a clearance of 4 feet from the limits of the equipment.
- Access roads shall be of sufficient width with turnarounds to allow ingress and egress for safety equipment.
- All access roads to the drill site or tank battery shall have a fence with a locked gate or cable that limits passage to operator's personnel, the land owner, the township Zoning Inspector, if applicable, and fire department. The gate and cable shall be locked and one key given to BLM, the township Zoning Inspector, if applicable, and the fire department.
- For new access roads, operators must notify all occupants within 200 feet of the well site access road that drilling activity would be commencing and provide an approximate time table for it. For an existing road, the operator must notify occupants inside the drilling unit.
- Access road shall be a minimum of 100 feet from the nearest residence building outside the drilling unit and a minimum of 50 feet from the nearest residence building within the drilling unit unless prior written consent of all property owners within the drilling unit has been obtained and submitted to BLM and the township Zoning Inspector, if applicable.
- The tank battery and related production equipment shall be located not less than 130 feet from any residence building outside the drilling unit, and not less than 100 feet from any residence building inside the drilling unit unless prior written consent of all residence building occupants within the drilling unit is obtained and submitted to BLM and the township Zoning Inspector, if applicable.
- Vibrations which are perceptible without the aid of an instrument shall not be

permitted beyond the drilling unit.

- For well sites near residential areas during drilling and well completion phase or later well workover operations:
 - Free liquids would be removed from pits within 7 days after the completion of drilling or well workover operations.
 - All unattended drilling pits for well sites located near residential areas would be fenced.
 - All pits would be closed within 14 days after drilling or subsequent well workover operations cease.

Site specific requirements relating to the following measure would be developed on a case-by-case basis (addresses public health and safety):

- BLM would evaluate the need for warning signs near access road entry during construction and drilling operations.

MEASURES THAT ADDRESS CULTURAL RESOURCES:

Site specific requirements relating to the following measure would be developed on a case-by-case basis:

- The need for cultural resources surveys would be determined on a site specific basis. Existing information indicates that surveys would likely be required prior to any surface disturbing activities.

APPENDIX B
PUBLIC COMMENT LETTERS



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6950 Americana Parkway, Suite H
Reynoldsburg, Ohio 43068-4132

RECEIVED

APR 29 1998

BUREAU OF LAND MANAGEMENT
MILWAUKEE DISTRICT OFFICE

April 24, 1998

James W. Dryden, Field Manager
Bureau of Land Management
P.O. Box 631
Milwaukee, WI 53201

Dear Mr. Dryden:

This responds to your request for comments on the "Mosquito Creek Lake Draft Planning Analysis/Environmental Assessment." We have reviewed the subject document and are pleased that it adequately addresses our concerns over possible project impacts to fish and wildlife resources, including federally listed threatened and endangered species. There will be no surface occupancy of federal land around Mosquito Lake and this should prevent environmental impacts of gas well drilling from affecting public lands and associated fish and wildlife habitat.

If we may answer questions or be of further assistance in this matter please contact Mr. Bill Kurey of this office at 614-469-6923 ext. 14.

Sincerely,

Kenneth A. Multerer
Kenneth A. Multerer
Acting Supervisor

Cortland City Fire Department

194 Lattin Street
Cortland, Ohio 44410

05-08-98

To whom it may concern,

While reviewing the Mosquito Creek Lake Draft Planning Analysis/Environmental Assessment that was sent to our Department, I have noted several concerns. I would like to express these concerns to you.

1. On page 4-73 under "Impact To Local Emergency Response Capability" It states "it is not anticipated that the additional wells would require increases in local emergency response capability" and "these teams are fully trained and have the necessary supplies and equipment available for emergency response".

I can not speak for the other departments or teams mentioned, I feel I must speak out on the above statement so that a false sense of security is not given.

While the Cortland City Fire Department has responded to and handled emergencies in the past dealing with gas and oil wells, we have never been placed in a scenario where the by product of, or a spill at a well site could directly contaminate a community's drinking water. With this in mind I must inform you that we do not have the equipment or expertise to handle such an incident.

2. Even though the City of Cortland does not border the State property in many locations, we do have mutual aid agreements with the departments that do. If we are to respond to an incident in our neighboring communities, our rolls will be limited due to lack of equipment if the incident involved contamination of the lake.

Sincerely,

William C. Novakovich

William C. Novakovich
Chief of Fire

JAMES A. TRAFICANT, JR.
17th DISTRICT, OHIO

COMMITTEE:
TRANSPORTATION AND
INFRASTRUCTURE
SUBCOMMITTEES:

RANKING DEMOCRAT: PUBLIC BUILDINGS
AND ECONOMIC DEVELOPMENT

AVIATION

COMMITTEE:

SCIENCE

SUBCOMMITTEE

SPACE

Congress of the United States

House of Representatives

Washington, DC 20515-3517

May 12, 1998

2446 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-5261

125 MARKET STREET
ROOM 311
YOUNGSTOWN, OH 44503
(330) 743-1914

5385 YOUNGSTOWN-WARREN ROAD

SUITE 503

NILES, OH 44446

(330) 852-5649

100 WEST 3RD STREET
EAST LIVERPOOL, OH 43920
(330) 385-5821

Mr. Carson Culp, Jr.
State Director
Bureau of Land Management
7450 Boston Boulevard
Springfield, VA 22153

Dear Mr. Culp:

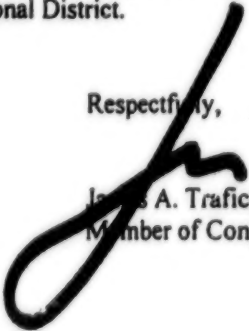
I am writing to follow-up on the correspondence I had in 1996 with the U.S. Department of the Interior Bureau of Land Management regarding the proposal to drill for oil and gas beneath Mosquito Creek Lake, in Trumbull County, Ohio. I have enclosed the letter for your convenience.

I appreciate the continued involvement offered to me and my staff throughout the Mosquito Creek Lake Draft Planning Analysis/Environmental Assessment (PA/EA) process. It has always been my position to reserve comment until the PA/EA has been completed, and I had an opportunity to review the document.

I have carefully considered the assessment, and the proposed safety procedures to contain leaks, spills, and overflows. After such consideration, I am compelled to join many of my constituents in opposition to any drilling on private land around Mosquito Creek Lake. Quite frankly, given the amount of natural resources in this country, the benefits of extracting gas and oil from the wells do not outweigh the potential damage that could be done to the environment, water quality, and overall quality of life for area residents.

Please be assured that I will continue to work with all interested parties. However, I cannot in good conscience support the proposed drilling. It is not in the best interest of the constituents in my Congressional District.

Respectfully,


James A. Traficant, Jr.
Member of Congress

JAT/bwc

Enclosures

C: Colonel Stephen B. Massey
Army Corps of Engineers

RECEIVED

MAY 14 1998

COMMENTS

Mosquito Creek Lake Draft
Planning Analysis/Environmental Assessment

NAME AND MAILING ADDRESS:

Thomas F. Holloway, P.E., Sanitary Engineer
Trumbull County Sanitary Engineer's Department
7500 Anderson Avenue, N.E.
Warren, Ohio 44484

PHONE: (330)675-2775 Extension 103

NAME OF ORGANIZATION OR AGENCY and
YOUR POSITION, if applicable:

See Above

PHONE: Same as above

Whom are you representing?

☐ Self ☐ Organization
☐ Other ☒ Federal, State or
Local Govt. Agency

How did you hear of this meeting?

☐ Newspaper ☐ Radio
☐ Television
☐ Dear Reader letter
☒ Other (specify)
Public Notice

Are you presently on our mailing list?

☐ yes ☐ no ☒ don't know

If not, would you like receive future mailings
relating to the proposed planning
analysis/environmental assessment and final
decision?

☒ yes ☐ no

If you have comments on the Mosquito Creek Lake Draft Planning Analysis Environmental
Assessment, please write them below. Does the analysis address all of the issues
adequately? If not, please identify where and why additional analysis is deemed
necessary.

Attached are the water quality standards from Ohio Administrative Statutes Rule 3745-1-07
that should be also reviewed and addressed with regard to Section 3.5 Water Resources
of the Mosquito Lake Draft Planning Analysis/Environmental Assessment. These standards
indicated there are limitation or impacts that exists (See highlighted ones).

These standards should be reviewed against what may be expected to occur from oil and
gas development. Consideration should be given to air contaminant's (VOC's) possibly
ending up in surface and ground water.

Do you have any other comments related to this proposal?

5798

To: Bureau of Land management
Field Manager
P.O. Box 631
Milwaukee, WI 53201-0631

May 15, 1998

RECEIVED

MAY 18 1998

BUREAU OF LAND MANAGEMENT
MILWAUKEE DISTRICT OFFICE

Dear Field Manager:

At the meeting at Cortland Elementary School on May 12th, a photo of an oil well fire was shown. I was the fire Chief and Officer-in-charge at that fire. An investigation after the fire showed that the well, associated equipment and dike met existing codes governing oil and gas wells. But, you must understand that those codes were and still are minimum standards. The investigation found that the crude oil in the storage tank ran out through a valve in the base of the tank and was ignited when it came in contact with the tank heater. This valve is used to allow water in the bottom of the tank to be removed from the tank before the crude oil is pumped out. Even though the well was inspected regularly, the dike was completely filled with crude oil when fire fighting equipment arrived.

Our main problem in fighting and extinguishing this well fire was the fact that the dike around the well was constructed to hold only the maximum amount of product that could have been contained in the storage tank at that well. In order to extinguish the fire, foam had to be blanketed across surface of the dike and associated metal equipment inside the dike. The metal equipment first had to be cooled down with water spray so as not to break down the foam solution and re-ignite the crude oil that was contained in the dike. When the water spray was played on the metal equipment inside the dike, the water went to the bottom of the dike and forced the crude oil over the top of the dike. This caused flaming crude oil to run in all directions. Fire crews had to wait until enough crude oil inside the dike burned in order to be able to cool the metal equipment. After cooling the metal sufficiently, foam solution would be blanketed over the surface of the dike to extinguish the fire while water spray continued to cool the metal.

My comment here is that even though all existing codes were met in construction of the well, there was a spill and a fire. The fire could not be extinguished because this would cause crude oil to spill out of the dike and could have caused additional fires or contamination. Now, what would happen if a well dike was filled with crude oil and one of our frequent rain storms caused crude oil to spill out and contaminate the water supply in Mosquito Lake?

In your presentation, it was indicated that present codes and standards for oil and gas wells were adequate. I feel that since these proposed wells border a community water supply, present standards are inadequate and should be studied closely and updated to make sure that no accidents happen. And if codes cannot be updated to properly ensure safety of the community water supply, then no leases for oil or gas wells should be let.

Richard Lee Stahl



COMMENTS

Mosquito Creek Lake Draft Planning Analysis/Environmental Assessment

NAME AND MAILING ADDRESS:

Kathy Mochingo
4010 Westlake Dr
Cortland Ohio 44410

PHONE: 330 6379659

RECEIVED

MAY 26 1998

BUREAU OF LAND MANAGEMENT
MILWAUKEE DISTRICT OFFICE

NAME OF ORGANIZATION OR AGENCY and
YOUR POSITION, if applicable:

Chapman's Lake Shore allotment

PHONE:

Whom are you representing?

☐ Self ☐ Organization
☒ Other ☐ Federal, State or
Local Govt. Agency

How did you hear of this meeting?

☐ Newspaper ☐ Radio
☐ Television
☐ Dear Reader letter
☒ Other (specify)

Are you presently on our mailing list?

☒ yes ☐ no ☐ don't know

If not, would you like receive future mailings
relating to the proposed planning
analysis/environmental assessment and final
decision?

☐ yes ☐ no

If you have comments on the Mosquito Creek Lake Draft Planning Analysis Environmental
Assessment, please write them below. Does the analysis address all of the issues
adequately? If not, please identify where and why additional analysis is deemed
necessary. need to wait for USGS report

The EA/PA does not adequately address the all the issues. The EA/PA
clearly minimizes the risk of groundwell contamination, air quality
and noise pollution in having a total disregard for the people
in the demographic area affected. You used outdated and
inaccurate statistics in preparing the Report to skew the outcome
to the desired net effect. The BLM could never be counted on to
objectively assess the environmental impact on the people
affected.

Do you have any other comments related to this proposal?

The practices of the BLM should be reviewed and revised.
Senate Committee investigations should be held.

Absolutely no human regard.

Who is getting a promotion upon completion of this project?

Does not address the use of or prohibition of radioactive
materials by the drilling companies. Air quality/noise pollution
and groundwell contamination ARE Public Safety Risks not just
small risk of accident. PEOPLE live here.

COMMENTS

Mosquito Creek Lake Draft Planning Analysis/Environmental Assessment

NAME AND MAILING ADDRESS: JANET YOHMAN JUDY STRAWN 386 BRISTOL CHAMPION TOWNLINE RD. WARREN, OHIO 44481	
PHONE: Below	
NAME OF ORGANIZATION OR AGENCY and YOUR POSITION, if applicable: PHONE: (330) 889-9131 or 638-1544	Whom are you representing? ☒ Self ☐ Organisation ☐ Other ☐ Federal, State or Local Govt. Agency
How did you hear of this meeting? ☒ Newspaper ☐ Radio ☐ Television ☐ Dear Reader letter ☒ Other (specify) Neighborhood	Are you presently on our mailing list? ☐ yes ☒ no ☐ don't know If not, would you like receive future mailings relating to the proposed planning analysis/environmental assessment and final decision? ☒ yes ☐ no
If you have comments on the Mosquito Creek Lake Draft Planning Analysis Environmental Assessment, please write them below. Does the analysis address all of the issues adequately? If not, please identify where and why additional analysis is deemed necessary. 	
Do you have any other comments related to this proposal? OUR PRIMARY CONCERN IS THE WATER WE GET FROM OUR WELLS. NOT ONLY FOR OUR OWN USE BUT ALSO FOR OUR RENTAL PROPERTIES THAT ADJOIN STATE PROPERTY. 	

5/98

COMMENTS

Mosquito Creek Lake Draft Planning Analysis/Environmental Assessment

NAME AND MAILING ADDRESS:

MICHAEL KERIOTIS
2781 HOFFMAN CIR NE
Warren OH 44483

PHONE:

NAME OF ORGANIZATION OR AGENCY and
YOUR POSITION, if applicable:

Mayfair Landromats

PHONE: 330 372 2342

Whom are you representing?

☒ Self ☒ Organization/BUSINESS
☐ Other ☐ Federal, State or
Local Govt. Agency

How did you hear of this meeting?

☒ Newspaper ☐ Radio
☐ Television
☐ Dear Reader letter
☐ Other (specify)

Are you presently on our mailing list?

☒ yes ☐ no ☐ don't know

If not, would you like receive future mailings
relating to the proposed planning
analysis/environmental assessment and final
decision?

☐ yes ☐ no

If you have comments on the Mosquito Creek Lake Draft Planning Analysis Environmental
Assessment, please write them below. Does the analysis address all of the issues
adequately? If not, please identify where and why additional analysis is deemed
necessary.

The Bureau of Land Mgmt. in Milwaukee
although very hard working and competent,
cannot have as much at stake as residents
and businesses in Trumbull County, OHIO
when it comes to water quality and safety.

Thank - you.

Do you have any other comments related to this proposal?

YES. As taxpayer & business owner I expect
local govt (and director(s) (Hicks et al.) to file
all and any injunction to halt these risky
business ventures. THANK YOU



Ohio Oil & Gas Association

1718 Columbus Rd., S.W. • P.O. Box 535 • Granville, Ohio 43023-0535
740-587-0444 • Fax: 740-587-0446 • E-Mail: ooga@nextek.net

RECEIVED

JUN - 3 1998

BUREAU OF LAND MANAGEMENT
MILWAUKEE DISTRICT OFFICE

1998

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President

*STEVEN L. GROSE
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DON VERNAL

JOHN C. WRIGHT

*Executive Committee

June 1, 1998

Mr. Chris Hanson, Assistant District Manager
Bureau of Land Management
P.O. Box 631
Milwaukee, WI 53201

RE: MOSQUITO CREEK LAKE DRAFT PLANNING ANALYSIS/
ENVIRONMENTAL ASSESSMENT

Dear Chris:

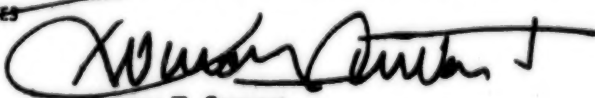
The Ohio Oil and Gas Association ("OOGA") applauds the effort of the BLM in fulfilling their fiduciary responsibilities involved in the completion of the above captioned analysis and assessment.

Upon review of the documents, OOGA finds no substantial objections to the findings contained in the report.

We agree with your analysis and encourage the BLM to move forward with their lease sale.

Best regards,

OHIO OIL AND GAS ASSOCIATION


Thomas E. Stewart
Executive Vice President

TES/rtr

RECEIVED

JUN - 3 1998

BUREAU OF LAND MANAGEMENT
MILWAUKEE DISTRICT OFFICE

Pete Perich
Marketing Consultant

5-30-98

Dear Terry,

The Perich Well in Bazetta township is one of the first drilled. It is still in operation. Wells are closing + capping. Production is stopped during the summer. Trumbull County has wells on every farm. Mosquito Lake is our only source of water. After comparing the water supply of the industrial outlet of Mazoning River, Mosquito was our savior supply. To do the directional drilling + destroy our Counties water lifeline, would be a disaster to our health. When this proposal was first published, I couldn't believe that anyone would think of it or even approving such a threat to our families health. My neighbor in Fla. has a lot to do with well drilling + tells me "this would be a dangerous venture." People in Wisconsin don't know about Trumbull County lifestyle, they shouldn't even authorize drilling thoughts. A close friend is a supervisor in Dept of Int in Wash DC. I'll be calling him.

Pete Perich
retired

1968 Dodge St. N.W. • Warren Ohio 44485 BUSINESSMAN
+ PROPERTY OWNER

RECEIVED

JUN - 4 1998

May 22, 1998

BUREAU OF LAND MANAGEMENT
MILWAUKEE DISTRICT OFFICE

Dear Concerned Citizen/Interested Party:

Following receipt and incorporation of public comments on the Mosquito Creek Lake Draft Planning Analysis/Environmental Assessment (PA/EA), released April 10, 1998, the Bureau of Land Management (BLM) will prepare and release a Proposed PA/EA. In an effort to reduce printing and mailing costs, we are attempting to identify those entities who would like to receive a copy of the Proposed PA/EA. If you wish to continue to receive information on this project, including the Proposed PA/EA, please complete the information below and return this form to the BLM by July 1, 1998. Those parties returning this form will be ensured of receiving all future mailings related to this proposal. Thank you for your continued interest.

PLEASE PRINT

Name: DONALD WALDRON
Affiliation (if applicable): * RESIDENT
ASSISTANT CHIEF TRUMBULL County HAZ/MAT
ASSISTANT CHIEF BAZETTA FIRE DEPT
Address: 3951 WESTLAKE DR.
City: CORLAND Zip: 44410
Phone (optional): 330 6385211

An addressed, postage paid envelope is enclosed for your use. If you would prefer to fax this information, the BLM fax number is (414) 297-4409. Information can also be provided by e-mail directed to tsaarela@es.blm.gov.

If there are any questions on this matter, please feel free to contact Terry Saarela at (414) 297-4437.

To Whom It May Concern:

THE TRUMBULL County HAZARDOUS MATERIALS TEAM
HAS NEVER been consulted but according to
your last mailing (THE PLAN) we were mentioned
AS A Response Agency.

James A Robinson
5077 Pierce road
Warren Ohio 44481
United States of America

RECEIVED
JUN - 8 1998
BUREAU OF LAND MANAGEMENT
MILWAUKEE DISTRICT OFFICE

June 03, 1998

Bureau of Land Management
Field Manager
P.O.Box 631
Milwaukee, WI 53201-0631
Att Terry Saarela.

Mosquito Creek Lake Draft Planning Analysis/Environmental Assessment

MR. Saarela

I have ben a citizen of Trumbull county all my life.I have spent more time on the lake then at my own home. Due to the fact of the proposed drilling on the lake or should i say nearby and under.I feel its prudent that you know the feelings of my family and community.

First everyone is concerned about the Balled Eagles in the game reserve. The proposed pipeline is slated to run rite through these endangered anamels habitate. I also know first hand that the emergency response teams in the area are not equiped or trained in the manor needed with these wells just from the shear number of wells proposed. I also personally feel the same as Congressman James traficant in a letter he wrote to MR. Carson Culp to your director in Virginia.

With knowing first hand how the drilling process works,being associated with the business for seven years. I know that there is no way to drill a well without the introduction of some kind of petroleum product,crude or refined,into the envierment. THer is also a good chance that the lake itself possibly mite become contaminated with the same petroleum products.

I do not feel this is a good idea there is to much at stake. We are not hurting for these fossil fules to justify the drilling. The damage to the envierment and wildlife habitat is not worth the personal gain some of your peers would recive. Fortyone wells, fortyone chances for disaster to strick, fortyone resins to keep our children away from the lake.

Thankyou.
James Robinson & Family.



June 1, 1998

George V. Voinovich • Governor
Donald C. Anderson • Director

Mr. James Dryden
Field Manager
U.S. Dept. of the Interior
Bureau of Land Management
Milwaukee Field Office
P.O. Box 631
Milwaukee, Wisconsin 53201

RECEIVED
JUN 10 1998

BUREAU OF LAND MANAGEMENT
MILWAUKEE DISTRICT OFFICE

RE: Mosquito Creek Lake Draft Planning Analysis/Environmental Assessment

Dear Mr. Dryden:

The Ohio Department of Natural Resources (ODNR) has completed a review of above referenced project located in Trumbull County, Ohio. ODNR offers the following comments:

The Division of Natural Areas and Preserves reviewed the Mosquito Creek Lake EA for rare species, special nature features and significant natural areas. The numbers and letters on the list below correspond to the areas marked in red and blue on the accompanying maps. A dot means an exact location, a triangle a general location within a square mile and a square a general location within greater than a square mile.

BRISTOLVILLE QUAD

1. *Circus cyaneus* - Northern Harrier, endangered
2. *Sistrurus catenatus* - Eastern Massasauga, endangered
3. Great Blue Heron Colony (breeding animal concentration)
4. *Betula populifolia* - Gray Birch, potentially threatened
5. *Rallus limicola* - Virginia Rail, special interest
6. *Erethizon dorsatum* - Porcupine, extirpated
7. *Haliaeetus leucocephalus* - Bald Eagle, state endangered, federal threatened
8. *Sistrurus catenatus* - Eastern Massasauga, endangered
9. *Carex lupuliformis* - False Hop Sedge, threatened
10. *Viburnum alnifolium* - Hobblebush, potentially threatened

CHAMPION QUAD

- A. Mosquito Creek Floodplain (significant natural area)
1. Maple-Ash-Oak Swamp Plant Community
 2. Great Blue Heron Colony (breeding animal concentration)
 3. *Hirundo pyrrhonota* - Cliff Swallow (colonial nester, constitutes a breeding animal concentration)
 4. *Betula populifolia* - Gray Birch, potentially threatened

Division of Real Estate and Land Management
1952 Belcher Drive, C-4; Columbus, OH 43224-1386

June 1, 1998

--Page 2--

As mentioned in the report (Chapter 4, Table 4.1 Resource Values and Objectives, Potential Impacts and Mitigation Measures, page 4-12), for Special Status Species, "a site specific assessment at time well is proposed" is recommended as a mitigation measure. ODNR concurs with this. Each well site should be inventoried for rare species and significant features before construction begins.

The table (4.1) goes on to mention that there will be no occupancy of state lands, that no wells/facilities will be approved within one-half mile of an active bald eagle nest or an established bald eagle nesting territory, that there are restrictions on locations where potential Indiana Bat habitat is present, and that removal of Gray Birch will be avoided. We concur with these measures. However, we believe that mitigation measures should also be specified within this section for the Eastern Massasauga and the other species and features listed above. The Mosquito Creek Floodplain (outlined in blue, letter "A" on map) is a very significant natural area, worthy of preservation. Work proposed in this area should be relocated, if possible, or disturbance kept to an absolute minimum.

Under Alternative B, Subsurface Limitations, Page B-21, #5, ODNR believes that the Division of Parks and Recreation (DPR) should be included in addition to private mineral owners. DPR has agreed to initiate licenses to permit directional drilling from private property, through the subsurface of State owned property administered by the Division, to reach federal leased minerals. It appears this may be the appropriate place to add DPR's name since a driller will need a license to drill through the subsurface that DPR outright owns.

The ODNR, Division of Oil and Gas disagrees with the statement on Page 3-14 that "The Berea was the main oil and gas reservoir in the Mecca pool, and shows of oil, gas, or other contaminants are far more common in the Berea than in the Cussewago." Based upon our review of historical records and prepared cross-sections, we believe that oil and/or gas commonly occur in both formations. Furthermore, we believe that the Cussewago was the primary oil reservoir during the early development of the Mecca field in the 1800's. On page 2-8 (paragraph 4), "2 feet by 50 feet" should read "20 feet by 50 feet."

Section 4.5 and Table D-3 in Appendix D address federal and state commitments to monitoring compliance with the existing rules, regulations and special mitigation measures developed through the environmental analysis process. The Division of Oil and Gas has consistently regarded the monitoring of site preparation, drilling, cementing, restoration and plugging activities for wells on Federal lands as a high priority. This commitment is reflected in Table D-3 which list specific activities that the Division inspector will be present to witness.

Since completion of the draft Planning Analysis/Environmental Assessment (PA/EA), the Division of Oil and Gas has become aware that declining revenues may require significant staff reductions, up to 40 percent by FY 2000, that would jeopardize our ability to maintain prior inspection commitments. Specifically, if additional funds cannot be secured between now and FY 2000, the Division of Oil and Gas will terminate its ground water investigation program. Subsequently, the Division would refer all citizen complaints alleging contamination of private water

June 1, 1998

--Page 3--

supplies to the BLM or the County Health District Sanitarian. Furthermore, if the current revenue problem results in reductions in our field enforcement staff, ODNR cannot ensure that inspectors will be available to assist with specific site reviews, or that they will be available to enforce compliance with permit conditions. In light of these uncertainties, ODNR requests that all references to our inspection capability be deleted from the PA/EA.

We appreciate the opportunity to provide these comments. If you have any questions or need for additional information, please contact Kimberly A. Baker, Environmental Administrator, at 614/265-6411.

Sincerely,



Wayne R. Warren, Chief
REALM

enclosures

cc: Jim Morris, Administration
John Schalip, Wildlife
Pat Jones, DNAP
Scott Kell, Oil & Gas
Dave Stites, Parks & Recreation



DEPARTMENT OF THE ARMY
PITTSBURGH DISTRICT, CORPS OF ENGINEERS
WILLIAM S. MOORHEAD FEDERAL BUILDING
1000 LIBERTY AVENUE
PITTSBURGH, PA 15222-4186

REPLY TO
ATTENTION OF

RECEIVED

JUN 18 1998

June 12, 1998

BUREAU OF LAND MANAGEMENT
MILWAUKEE DISTRICT OFFICE

Planning Division

Mr. Chris Hanson
Assistant Field Manager
Division of Natural Resources Management
Milwaukee Field Office
Bureau of Land Management
P.O. Box 631
Milwaukee, Wisconsin 53201

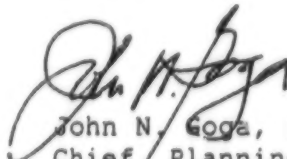
Dear Mr. Hanson:

The Pittsburgh District, U.S. Army Corps of Engineers (USACE) appreciated the opportunity to review the draft of the Mosquito Creek Lake Planning Analysis/Environmental Assessment (PA/EA). This PA/EA reviews management alternatives for leasing of Federal oil and gas resources underlying the Pittsburgh District-USACE Mosquito Creek Lake project in Trumbull County, Ohio.

The reviewers of this document in the Pittsburgh District consisted of members from our Planning, Operations and Readiness, and Real Estate Divisions, and also Mosquito Creek Lake personnel. Their comments have been compiled and are being forwarded with this letter as an attachment. We are submitting these comments for consideration by the Bureau of Land Management (BLM) to assist in the production of a quality document.

We would like to emphasize that the Corps of Engineers will not make a decision on granting consent to lease the Federal minerals until all public comments have been satisfactorily addressed and all protests have been resolved.

We remain committed to our cooperating role in the PA/EA process. If you would like to discuss these comments further or if you have any questions, please contact Mr. James Purdy at (412) 395-7224 or Ms. Maria Novak at (412) 395-7222.


John N. Goga, P.E.
Chief, Planning Division

Enclosures

1. Section 2.4, CRA's/CA's (Federal Agreements). It might be a good idea to add "NEPA Compliance" to the title of this section since the agreements themselves are discussed in more detail in Sections 2.1 and 2.2. Also recommended is a brief discussion comparing the process for reviewing APD's for Federal wells versus the procedures discussed for CA's and CRA's (the types of Federal agreements required for wells tapping both Federal and private resources).

2. Section 3.3, Geology. Under "Stratigraphy" on page 3-7, no mention is made of the location of the Clinton formation relative to the other formations above it. Figure 2 in Appendix C does help, but it might be a good idea to note its depth below the Cussewago Sandstone, the principal aquifer in Trumbull County.

3. Section 3.7, Biological Resources (Wetlands).

a. We recommend stressing that the figures and wetlands map are approximations based on a number of sources. A statement similar to the following is recommended: "Wetland maps and acreage determinations are approximations based upon the best available information. However, they are not exact. Site specific analysis by the COE Regulatory Branch would be required for proposed well sites to determine possible wetlands impacts."

b. "Planning Area" and "Project Area" are frequently referred to in this section. These terms are defined on page 1-5 and 1-1 respectively, but it might be a good idea to add these terms to the glossary found after Appendix E for easy reference.

4. Section 3.8 - Noise. A table which summarizes existing noise levels as measured at various sites around the MCL Project would provide a good basis for comparison with Tables 3-6 and 3-7.

5. Table 4-1, Special Status Species, Page 4-12. We appreciate the recognition of disturbance to bald eagle nesting cycles as a potential impact in this section. In addition to the distance set-back mitigation measures mentioned, we would like to retain the option of making additional seasonal restrictions if site conditions warrant. For example, we may want to restrict drilling activities during the early portion of the bald eagle nesting cycle (most likely January to early February). We would coordinate with ODNR regarding the need for such a restriction and the exact timing of it.

6. Section 4.2.4, Water Resources. The history of oil and gas development in the study area is summarized in "Previous Hydrocarbon Development" on page 3-36. We are concerned that

expansion of fissures in the rock of the production zone during hydrofracing of proposed wells around the lake or directionally drilled beneath it will "reactivate" improperly plugged or abandoned wells. Activities associated with new upland wells in the Allegheny Reservoir watershed have caused abandoned and sometimes submerged wells to leak oil and gas into the reservoir. This issue is not addressed in the draft and it is one of our most serious concerns. We recommend that a determination be made as to the existence of plugged or abandoned gas wells in the planning area, particularly in the area that is now the lake bottom. If there are any wells of this type, the issue should be addressed in the PA/EA. In addition, the document should state that the issuance of any permit to drill does not authorize the driller to use "four spot" drilling/secondary recovery methods. Use of such a method at the Kinzua project lead to oil release under the water surface of Kinzua's reservoir due to the faulty plugging procedures employed prior to the development of the reservoir.

7. Section 4.2.10, Socioeconomics. Those unfamiliar with computing the economic impacts relating to oil and gas development may have questions after reading this section and reviewing Tables 4-10 and 4-11. Is the Federal royalty payment supposed to be equivalent to 12.5% of the revenue from hydrocarbon sales, as found in those tables? If so, the royalty payment figures stated in the first full paragraph on Page 4-63 seem to be underestimated. Also, are the stated figures (\$541,000 for Alt. A and \$2.629 million for Alt. B) representative of the total royalty payment, which would then be split 25%/75% between the Federal government and the state government? This issue was also raised at the public meetings on May 11 and 12. Some clarification is recommended, particularly regarding the amount of money that the County could reasonably expect to receive. Also, the last paragraph on page 4-63 refers to Table 4-12 and Table 4-13 when it should say 4-10 and 4-11.

8. Section 4.2.10, Socioeconomics. The discussion of economic impacts does not adequately address the basic question of how much revenue will flow down to Trumbull County in the event that leasing occurs. The royalty payments are estimated to be \$541,000 and 2.629 million dollars (alternative A and B respectively) which is spread over a fifty year life of the drilling program. The document does not indicate whether 75% of this flows to the local economy. In addition, the document does not address roads, etc. The estimates of "75" new jobs created is based upon applications of economic multipliers which in turn is based upon the total amount of revenue generated by the sale of the oil and gas resources. Since the production would occur over a 50 year period, the actual job impact would be

considerably less. The job impact and economic impacts at the local level would be limited to the actual cost of drilling the well and servicing them.

9. Section 4.2.12, Public Health and Safety. At the public meetings, it was clear that there was a great deal of concern regarding the capability of local emergency personnel to respond to incidents at gas well sites. Recommend that the "Impact to Local Emergency Response Capability" section on Page 4-73 be expanded to include additional detail on what type of unit they are (paid or volunteer), the equipment they have available and the level of training their personnel have received. If the local emergency response is deemed inadequate, BLM should consider funding equipment and training at the local level in support of the disaster response effort. Also, has the possibility of utilizing professionally trained and equipped emergency response teams (i.e. a team associated with the nearby Youngstown-Warren Regional Airport) been investigated?

10. Section 4.2.12, Public Health and Safety, Liability and Bonds. The statement that BLM will require additional bonding if an operator poses a risk leaves too much to the discretion of BLM. The Corps' past history at Allegheny National Forest and the clean-up costs incurred in the 1980's suggests that bonding in amounts in excess of the amounts listed is necessary. In as much as costs of plugging and site cleanup costs will be higher in the out years, the bonding amounts should be raised in anticipation of the increased costs since an operator may abandon the site and forfeit a bond in lieu of performing the site restoration.

11. Section 4.3, Cumulative Impacts. It is noted in the report that 42% of the land adjacent to and within one-half mile of the project area is considered a "natural area". Although that term is not clearly defined, it is assumed that "natural areas" are comprised of a number of different types of habitat, from meadows to forests. One of our concerns regarding oil and gas drilling at any project is the potential for habitat fragmentation, particularly involving conversion of forested land to the open areas associated with access roads and well sites. We note that this issue is addressed to some extent, but not in much detail, on page 4-44. We also feel it would be beneficial if the land use classification chart could somehow be tied in with probable well locations, recognizing that exact locations cannot be determined at this time. Is it accurate to assume that habitat fragmentation was an issue deemed beyond the scope of the EA, given lack of knowledge as to exact well locations? Or, was it determined that the total disturbed acreage is insignificant when compared to the total planning area?

12. Section 4.4, Summary of Anticipated Impacts, Table 4-15. It would be informative to indicate in Alternative B the projected royalties going to the local communities in this section of the chart.

13. Section 4.5, Monitoring.

a. Regarding short-term monitoring actions, is there any difference in the level of monitoring effort expended with regards to whether the well is draining all Federal minerals or if it is part of a Communitization Agreement or Compensatory Royalty Agreement?

b. A concern was raised at the public meetings regarding wells that are no longer producing but remain unplugged. We recommend a more thorough explanation regarding how the BLM and ODNR will assure that wells will be plugged properly once they are taken out of production. This explanation should include a discussion of steps that will be taken in plugging a well developed by an operator that subsequently goes bankrupt.

14. Appendix A - Oil and Gas Development Constraints and Special Mitigation Measures. There is inconsistency between the statement in Appendix A which mentions that certain Bazetta Township regulations will be extended to Mecca and Greene Townships and what is specifically written into the body of the PA/EA under the corresponding impacts and mitigation measures.

15. Appendix B - Reasonably Foreseeable Development Scenario. Summary 1 - RFDS Under Alternative A. The last sentence on Page B-12 states that the BLM would not be involved in permitting of any of the wells drilled under Alternative A. It might be beneficial to add a statement explaining that the BLM can attach protection measures to the Federal agreement (CRA) that would be utilized in this situation, or refer the reader to Section 2.1 of the PA/EA.

16. General Comment.. The draft PA/EA avoids the issue of containment, and disposal of saline cuttings is only addressed with a few comments like: "In addition, BLM would require segregation of all saline cuttings, if warranted." (Page 4-33, para 5), and "The fate of pit cuttings and liner would remain a negotiable item to be addressed at the time specific proposals are received. . . ." (Page 4-33, para 6). This discussion avoids any mention that the primary drilling target at Mosquito Creek Lake is the Clinton Sandstone, and to reach this formation requires drilling through the saline formation of about 750 feet of halite. The containment issue is not acknowledged in the

draft PA/EA; one only knows that it is a negotiable item.
Similarly, the saline group is not mentioned in the discussions
of geology and stratigraphy.

**BAZETTA TOWNSHIP FIRE DEPARTMENT
773 EVERETT-HULL ROAD
CORTLAND, OHIO 44410
(330) 637-4136**

**RECEIVED
JUL 16 1998**

**BUREAU OF LAND MANAGEMENT
MILWAUKEE DISTRICT OFFICE**

JULY 10, 1998

TO WHOM IT MAY CONCERN,

WHILE REVIEWING THE MOSQUITO CREEK LAKE DRAFT PLANNING ANALYSIS/ENVIRONMENTAL ASSESSMENT THAT WAS SENT TO OUR FIRE DEPARTMENT MY ASSISTANT CHIEF AND I NOTED SEVERAL CONCERNS FOR YOU.

1. ON PAGE 4-73 UNDER "IMPACT TO LOCAL EMERGENCY RESPONSE CAPABILITY" IT STATES "IT IS NOT ANTICIPATED THAT THE ADDITIONAL WELLS WOULD REQUIRE INCREASES IN LOCAL EMERGENCY RESPONSE CAPABILITY" AND "THESE TEAMS ARE FULLY TRAINED AND HAVE THE NECESSARY SUPPLIES AND EQUIPMENT AVAILABLE FOR EMERGENCY RESPONSE."

MY ASSISTANT CHIEF IS ALSO THE ASSISTANT CHIEF OF THE TRUMBULL COUNTY HAZARDOUS MATERIALS TEAM AND IN CHECKING WITH HIM THE COUNTY HAZ-MAT TEAM, MINERAL RIDGE FIRE DEPARTMENT AND WARREN CITY FIRE DEPARTMENT HAVE VEHICLES SET UP FOR RESPONSE WITH A LIMITED AMOUNT OF SORBENTS ON THEIR VEHICLES. HUBBARD FIRE DEPARTMENT HAS TRAINED PERSONNEL TO RESPOND TO EMERGENCIES WITH VERY LIMITED EQUIPMENT AS THEY DO NOT HAVE A VEHICLE JUST FOR THAT PURPOSE.

WHEN DEALING WITH A SPILL IN BAZETTA TOWNSHIP, THE TRUMBULL COUNTY HAZ-MAT TEAM WOULD BE REQUESTED TO RESPOND. ALL OF OUR VEHICLES HAVE SPILL KITS ON BOARD THAT CAN HANDLE A SPILL UNTIL THE HAZ-MAT TEAM ARRIVES. OUR WHOLE DEPARTMENT IS TRAINED AND CERTIFIED TO THE OPERATIONS LEVEL WITH A FEW MEMBERS TRAINED TO THE TECHNICIAN LEVEL.

WE CAN NOT SPEAK FOR OTHER FIRE DEPARTMENTS, WE FEEL WE MUST SPEAK OUT ON THE ABOVE STATEMENT SO THAT A FALSE SENSE OF SECURITY IS NOT GIVEN, SINCE OUR TOWNSHIP IS ONE OF THE AREAS BEING CONSIDERED FOR THIS DRILLING.

WHILE BAZETTA FIRE DEPARTMENT HAS RESPONDED TO AND HANDLED EMERGENCIES IN THE PAST DEALING WITH GAS AND OIL WELLS, WE HAVE USED THE TRUMBULL COUNTY HAZ-MAT TEAM TO ASSIST US WITH THESE PROBLEMS AS WE ARE NOT EQUIPPED TO HANDLE A LARGE SPILL.

2. BAZETTA TOWNSHIP DOES BORDER STATE PROPERTY IN MANY LOCATIONS AND THE DRILLING SITES ARE LOCATED IN OUR JURISDICTION AND WE WILL USE THE TRUMBULL COUNTY HAZ-MAT TEAM WHEN NEEDED. THE TRUMBULL COUNTY HAZ-MAT TEAM HAS MUTUAL AID AGREEMENTS WITH OTHER TEAMS THAT CAN ASSIST THEM IF NEEDED.

ONE ITEM TO KEEP IN MIND; EFFECTIVE APRIL 29, 1997 FROM OSHA 29 CFR PART 1910.120 PARAGRAPH (8) 1910.120 (8) (6) TRAINING: TRAINING SHALL BE BASED ON THE DUTIES AND FUNCTIONS TO BE PERFORMED BY EACH RESPONDER OF AN EMERGENCY RESPONSE ORGANIZATION. THE SKILL AND KNOWLEDGE LEVELS REQUIRED FOR ALL NEW RESPONDERS, THOSE HIRED AFTER THE EFFECTIVE DATE OF THIS STANDARD SHALL BE CONVEYED TO THEM THROUGH TRAINING BEFORE THEY ARE PERMITTED TO TAKE PART IN ACTUAL EMERGENCY OPERATIONS ON AN INCIDENT.

EMPLOYEES WHO PARTICIPATE, OR ARE EXPECTED TO PARTICIPATE, IN EMERGENCY RESPONSE, SHALL BE GIVEN TRAINING IN ACCORDANCE.

IF YOU HAVE ANY QUESTIONS PLEASE FEEL FREE TO CONTACT MYSELF, CHIEF ROBERT L. LEWIS OR MY ASSISTANT CHIEF DONALD WALDRON AT (330) 637-4136.

SINCERELY,



CHIEF ROBERT L. LEWIS



ASSISTANT CHIEF DONALD WALDRON

APPENDIX C
ADDITIONAL REFERENCES

ADDITIONAL REFERENCES (original list of references can be found in Draft PA/EA)

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END

04-22-99